

# PURCHASING

JULY, 1951

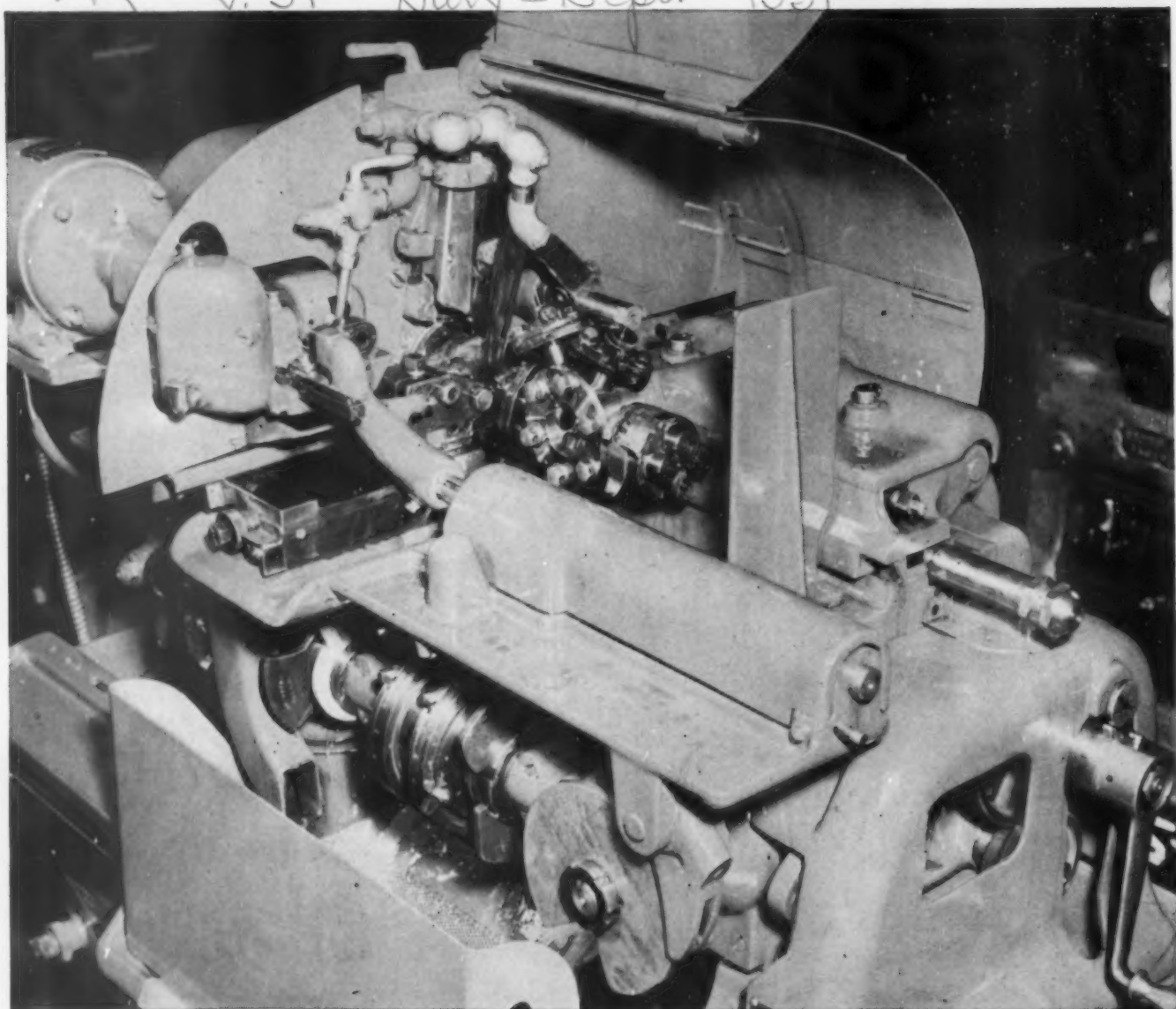


STANLEY W. MACKENZIE, N.A.P.A. Convention Program Chairman

N.A.P.A. CONVENTION REPORT ISSUE

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## MORE PARTS PRODUCED

... because Texaco reduced rejects  
for this manufacturer\*

With the help of Texaco  
Products and Lubrica-  
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# TEXACO



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# Century MOTORS

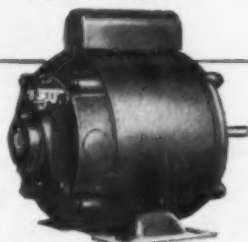
Choose From These Many Types  
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**HEAVY-DUTY for Industrial and  
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From Century's wide range of types and sizes, there's a proper motor for all popular applications. You can be confident that the right Century motor will assure a long life of satisfactory performance.

Shown here are examples of Century's line of **FRACTIONAL HORSEPOWER** motors—ruggedly built for smooth, quiet operation, with a remarkable freedom from vibration

Century Electric Company is celebrating its 50th year in the electrical industry.



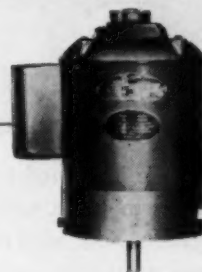
**TYPE CSH**—Capacitor Start Induction Single Phase Motor suitable where high starting torque and normal starting current is satisfactory.



**TYPE SP**—Split Phase Induction, Rigid Base, Single Phase Motors suitable for light starting duty.



**TYPE SC**—Squirrel Cage Polyphase Motor built in fractional sizes for all torque requirements.



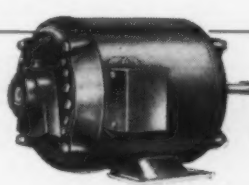
**JET PUMP MOTOR**—Capacitor Start Single Phase Motor available in sizes for practically every jet pump application.



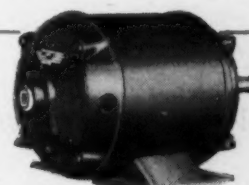
**TYPE SP**—Split Phase Induction, Cushion Base, for quiet operation.



**OIL BURNER MOTOR** especially designed for this service. Compact, rugged; smooth, quiet starting and running.



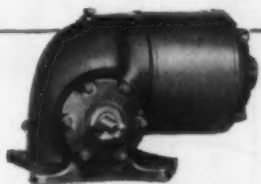
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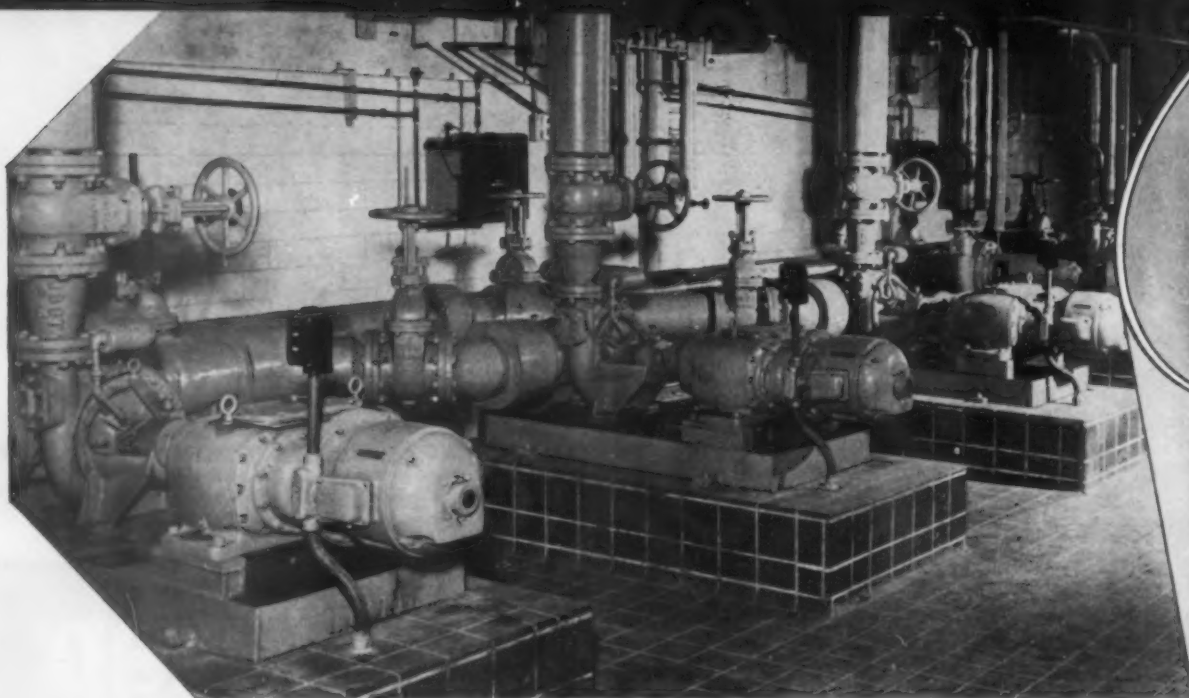
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\* Your DORMANT SCRAP is any obsolete, broken or wornout and irreparable machinery, tools, equipment, dies, jigs or fixtures, etc., that may encumber your premises. These, in the language of steel, are scrap, vital to steel production, and hence convertible into cash.

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**Graybar**

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# PURCHASING

The National Magazine of Industrial Procurement

VOL. 31, No. 1

JULY, 1951

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# STOP

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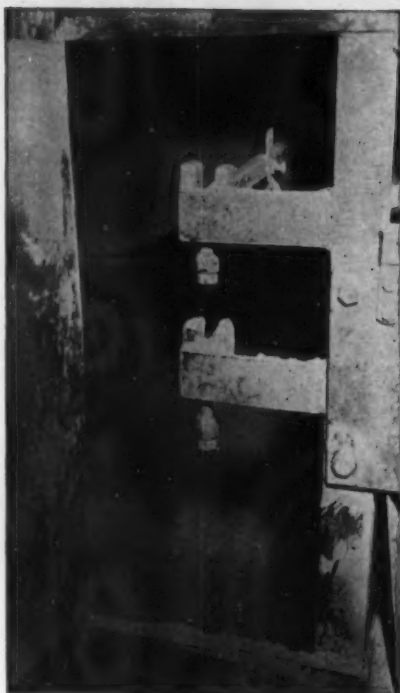
# RUST

## RUST-OLEUM CORPORATION

2431 Oakton Street, Evanston, Illinois

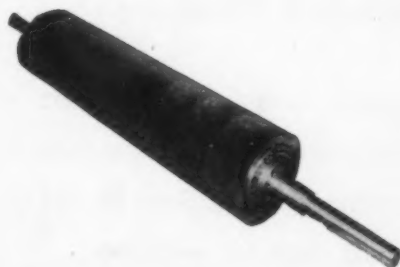


"Rigid Economy, Men"



In the operation above, soapstone talc is being blown on each side of uncured rubber stock as it is leaving the extruding machines. The Osborn brushes (shown at the left of this photograph) are spreading the talc evenly and removing the excess powder which is salvaged for later use.

Brushes formerly used had wooden cores and were subject to splitting and warping. The present Osborn Heli-master® brushes have steel center construction to provide greater uniformity of fill, with just the right stiffness and fullness for efficient spreading action and longer-operating life.



Osborn Helimaster brushes are furnished in a wide range of diameters, lengths and types of fill material to suit every kind of industrial cleaning, scrubbing or surface finishing requirement. For present or proposed needs your OBA (Osborn Brushing Analyst) will gladly show you how new Osborn brushing techniques can improve your operating efficiency and cut production costs. Call or write for this service. There is no obligation.



## What powders this rubber face?

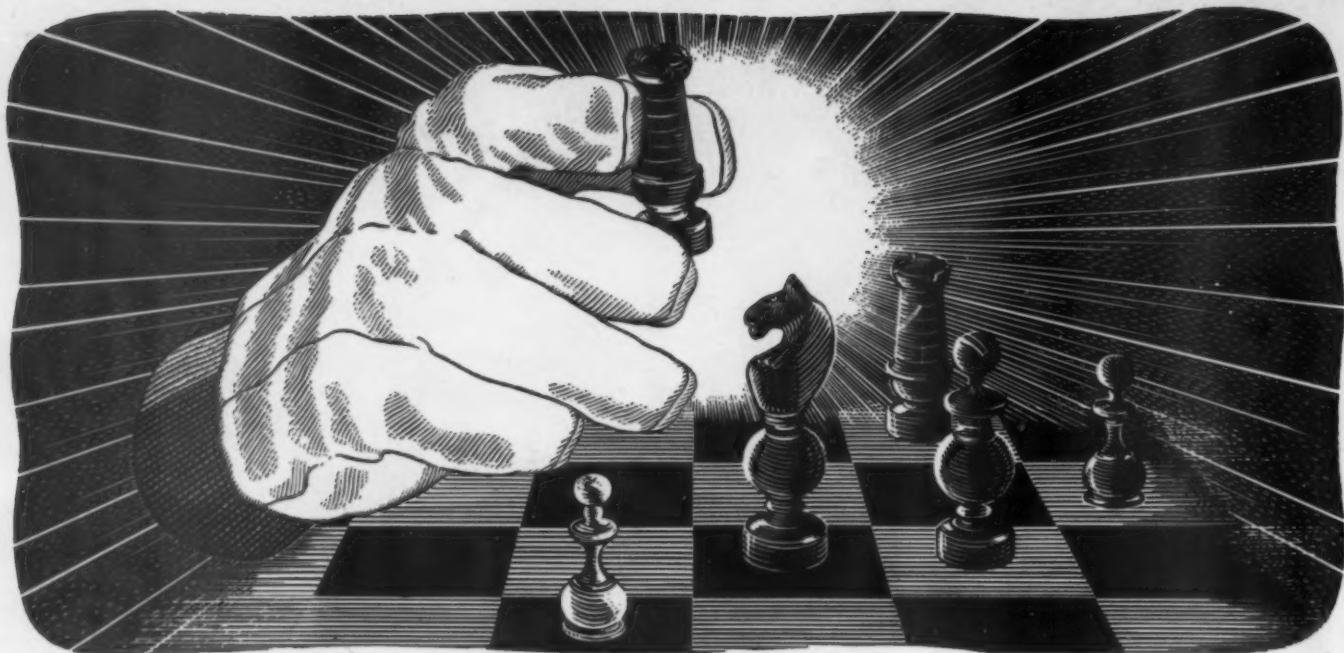
... *A brush!* Here is uncured rubber stock coming from an extruding machine. Because it is tacky and hard to handle, soapstone talc powder must be spread on both faces, top and bottom.

Originally the powder was blown onto each side. Coverage was spotty and soapstone was wasted. Now, Osborn power brushes, acting as giant "powder puffs," spread the talc evenly over the entire surface and remove the excess which is salvaged.

There are endless uses to which Osborn power brushing can be applied to simplify production and cut costs. Your Osborn Brushing Analyst will gladly demonstrate the possibilities for your operations. Write Dept. 484, The Osborn Manufacturing Company, 5401 Hamilton Ave., Cleveland 14, Ohio.



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FOR QUALITY WORKMANSHIP AND MATERIALS**



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RIEDEL TEXTILE CORP., 342 Madison Ave., New York 17, N. Y.

# Riegel

## WORK GLOVES

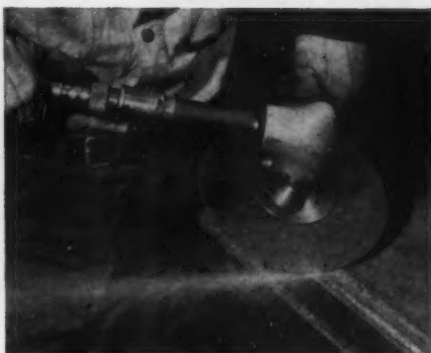
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**DOUBLING UP ON EFFICIENCY . . .** With Norton wheels on both ends of your floor or bench stand, you're twice as sure of top performance. Norton has the right combination of abrasive and bond to produce the most satisfactory results on all types of off-hand grinding.



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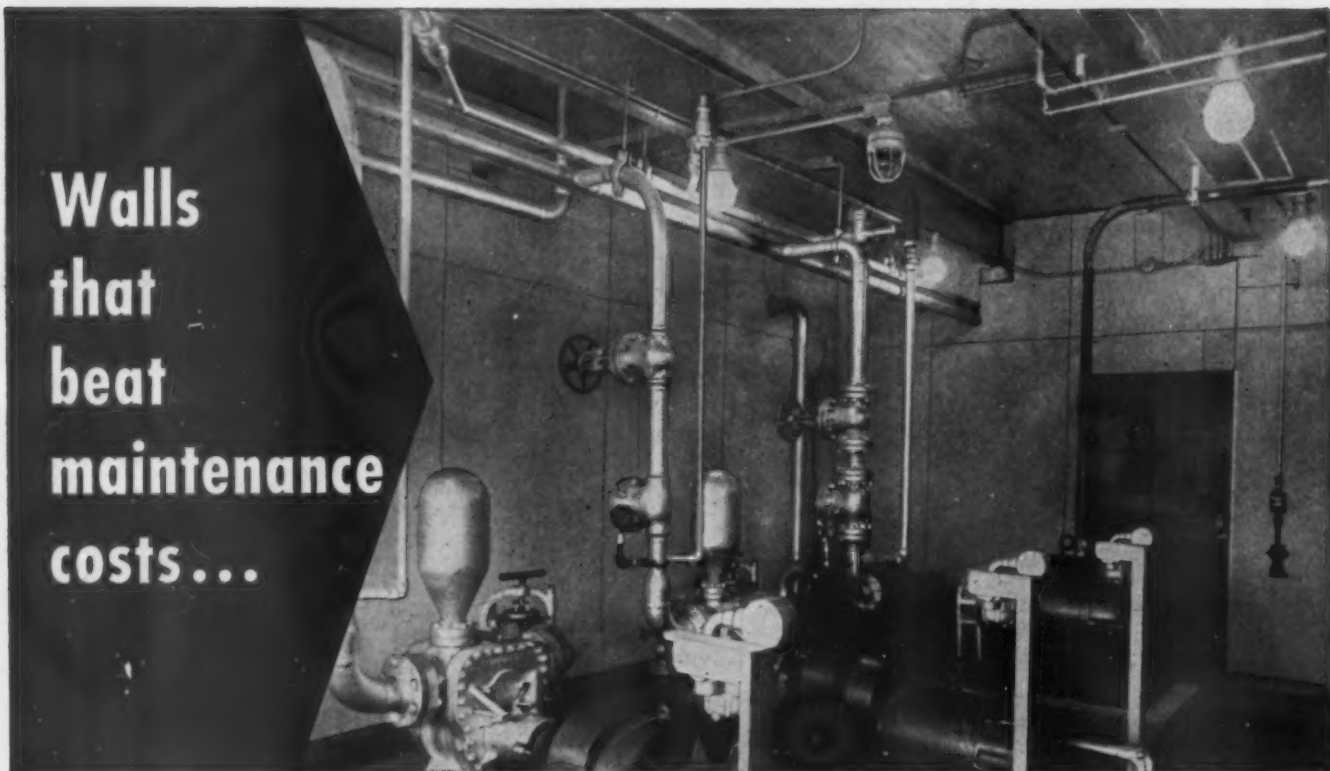
**GET THE RIGHT WHEEL!** That's the key to fast, economical grinding. And for every rough grinding job you do — from lightest burr-removal to heavy swing-frame work — there's a Norton wheel that's *exactly right*. And remember, your Norton distributor and Norton abrasive engineer are always ready to study your grinding applications. You'll find their suggestions point the way to sure savings in time and money. Meanwhile, you'll find a lot of facts about better, lower-cost rough grinding in the Norton booklet FORM 1405. Get it from your Norton distributor or representative, or write us direct. NORTON COMPANY, Worcester 6, Mass. Distributors in all principal cities.

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**NORTON**  
**ABRASIVES**

*Making better products to make  
other products better*

**Walls  
that  
beat  
maintenance  
costs...**



Water treatment room in large utility plant. Walls are "Century" APAC,  $\frac{3}{4}$ " thickness.

## they're "Century" APAC!

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**APAC is maintenance free!** It cannot rot, rust, or corrode—rodents and termites can't hurt it. APAC doesn't even need protective painting to preserve it!



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You'll find "Century" APAC used today in hundreds of plants, in dozens of industries: For siding, office paneling, fire-resistant sheathing in shops and stockrooms, storage bins, linings for elevator casings, shower stalls—in fact, wherever quick, economical construction and maintenance-free service are wanted. Write us for complete information on "Century" APAC and the name of your nearest distributor.

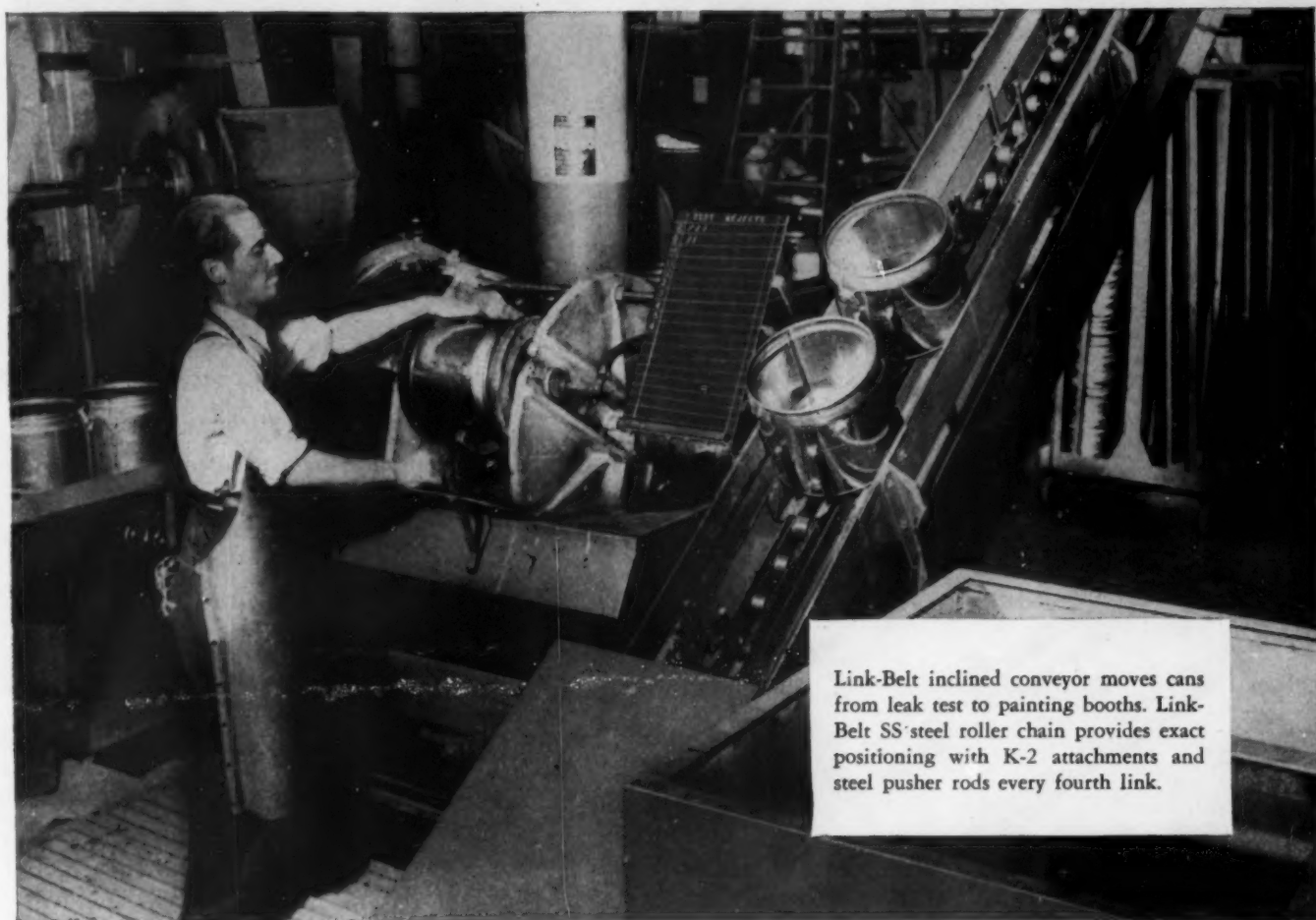
**KEASBEY & MATTISON**  
COMPANY • AMBLER • PENNSYLVANIA

*Nature made Asbestos... Keasbey & Mattison has made it serve mankind since 1873*



No ONE chain serves every purpose

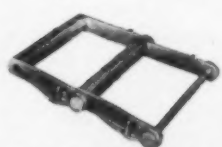
# LINK-BELT makes all types of chains



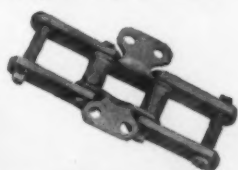
Link-Belt inclined conveyor moves cans from leak test to painting booths. Link-Belt SS steel roller chain provides exact positioning with K-2 attachments and steel pusher rods every fourth link.

...recommends the right one for your job

Typical chains from the complete LINK-BELT line



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12,327

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**LINK-BELT**



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*—when you think of  
fasteners think of United*

**SCREWS • NUTS • WASHERS  
CLUTCH HEAD SCREWS  
STAMPINGS**

## United Screw and Bolt Corporation

Chicago 8

Cleveland 2

New York 7

# PURCHASING PREVIEWS

A WASHINGTON REPORT FOR PURCHASING AGENTS

July 2, 1951.

## NEW PHASE FOR MOBILIZATION

Mobilization of industry is currently in a new phase. Controls which have been developed during the past six months are now taking hold. Military purchasing is beginning to take a very substantial tonnage of materials.

The transition from a high level civilian economy to a mixture of roughly 70% civilian and 30% military has been quick and relatively without serious disruption.

First phase of the mobilization was a highly speculative period, with all buyers looking ahead and buying in anticipation of shortages. The speculation was influenced largely by fear of shortages, rather than speculation as to price increases.

Heavy volume of buying to build up inventories brought prices up sharply, and the unrestrained buying by consumers encouraged all levels of distribution to build up inventories.

Consumers bought on the basis of fear of a prolonged period during which civilian goods would not be available. Record number of housing starts further buoyed up the demand for all types of consumer durables and household appliances.

## SHIFTS IN CONSUMER BUYING

The present slump in consumer buying results from the sharp curtailment in housing starts, plus the feeling by the average consumer that while civilian goods production may be curtailed, durable goods will nevertheless be available for purchase.

Another factor that has contributed to the apathy of many consumer buyers is the feeling that prices are too high, and will come down. The price wars in petroleum products and the price cutting by large scale merchandisers of consumer goods tend to give the impression that lower price levels can be expected.

## MATERIALS USE NOW AT HIGH LEVEL

The underlying economic developments are contrary to the public's expectations of adequate supplies and lower prices.

While earlier procurements of materials for defense industry were largely in anticipation of need, the production lines are beginning to chew up materials. The peak of military production under the currently projected program is about 12 months off, but the direct military output is beginning to be a sizeable factor in the materials market.

In addition, the so-called military supporting programs are beginning to reach a peak. Plant expansion is at extremely high levels. New plant expansion plans will not be considered for accelerated amortization allowance except in urgent cases. Roughly \$6 billion worth of expansion of plant facilities has been approved under the accelerated tax amortization program, and a number of applications for this type of concession are still pending.

The volume of heavy construction now underway will establish a new record for this class of construction. Furthermore, in addition to the industrial expansion projects which have been approved for special tax consideration, a very substantial volume of industrial expansion has gone ahead without the tax aid.

The freight car and locomotive programs, the petroleum industry, the ship, barge and smaller craft, and ship repair programs, and the farm machinery programs are all underway, and require large tonnages of steel and non-ferrous metals.

## NEW FACILITIES ADDING TO MATERIALS SUPPLY

The overall planning for mobilization calls for cutting down on so-called luxury and civilian comfort goods, and putting the materials so saved into the essential civilian and direct military programs.

At some point in the future, the expanded plant, power and transportation facilities will be contributing to the amount of materials available, rather than draining materials from the market. This change is now in process, with new aluminum facilities coming into production.

**pipng maintenance  
costs more  
now!**

**You spend less for it  
by using Dependable Quality  
**CRANE VALVES****

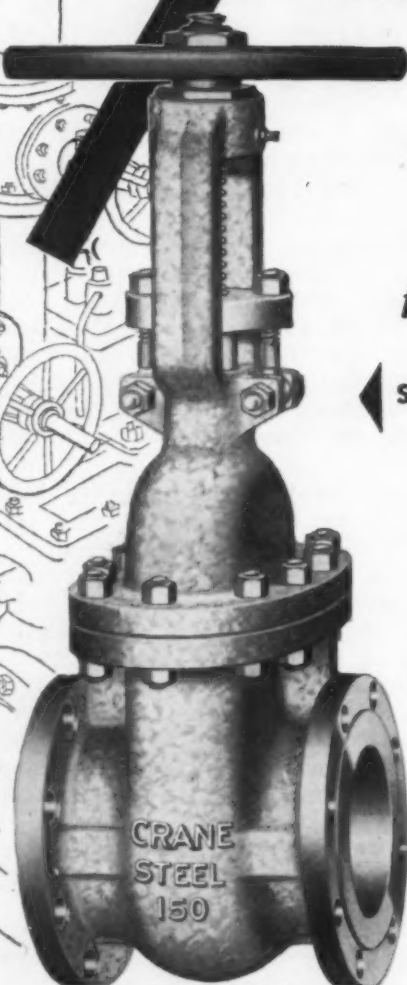
*... That's why  
more Crane Valves  
are used  
than any other make*

◀ **Steel valves that stay on the job**

You can practically forget valve maintenance worries with Crane Cast Steel Wedge Gates. They're unusually rugged... amply reinforced at all stress points. Disc is precision-guided to reduce seating surface wear. Straight-through ports give smooth flow, with minimum turbulence and erosion.

Stuffing box depth and design assure tight stem seal... long packing life. Valves available in trim materials for steam, water, gas, oil, and oil vapor services.

Ask your Crane Representative about the better quality and greater dependability of Crane valves—your assurance of on-the-job performance that spells lower final cost.



Crane 150-Pound Steel Gate Valve

# CRANE

**VALVES • FITTINGS • PIPE • PLUMBING • HEATING**

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All Industrial Areas

# ▲PURCHASING PREVIEWS

continued

On the whole, however, plant expansion projects are taking a much greater quantity of materials than is being returned by new facilities coming into production. The tide will change materially by spring of next year, but at that time the direct military production lines will take all the available surplus.

## OUTLOOK ON CONSUMER BUYING

The materials cutbacks on consumer durable goods will continue for at least the next 18 months, and the rate of civilian goods manufacture will be from 30 to 40% less than 1950 levels.

A cutback of from 30 to 40% in civilian goods production would not ordinarily create great problems of shortage. There is a large bank of consumer goods in the hands of distributors, and an even greater bank in the hands of consumers.

However, new demand factors will become increasingly apparent toward the end of this year. These stem largely from the large sums which will be expended in payrolls for the production of goods which the consumer cannot buy. It is generally assumed that the direct military and supporting programs will mean the expenditure next year of \$30 billion in hard goods which will not be available for consumer purchase.

This will tend to build up the consumer purchasing power, and to create a new upsurge of consumer buying.

## NO LET-DOWN IN DEFENSE PRODUCTION

One factor that cannot be overlooked in anticipating the 18-month pattern of military buildup, is the possibility that military tensions will lessen and that the defense mobilization program will be scuttled.

This is so speculative that while it cannot be completely discounted, the possibility is too remote to be considered in planning for the immediate future.

Assuming, then, a continuing pattern of a mixed economy, consumer durable goods will obviously become scarce. Along with scarcity of basic materials, there will be an even greater shortage of plating materials and finishes. Substitute materials will have to be used in finishes.

## HIGHER COST FACTORS

The necessity of using substitute materials will, in most instances, mean higher costs of production. A more important factor in increasing costs of consumer goods production is the reduction in volume of output of civilian goods. The lower rate of output will mean higher costs per unit.

Still a third factor in increasing costs is the continuing trend toward higher wages. The formula of allowing only a 10% increase in wages above the January 1950 levels is being observed more in the breach than by adherence.

Taking the materials scarcities and higher production cost factors into account, there is no justification for large scale liquidation of inventories. The explanation of the price cutting splurge by large merchandisers is specifically that these merchandisers are interested in turnover, not whether an item sold low at the current market may sell at a much higher figure six months from now.

As long as merchandise turns over at a high rate, the merchandising outlets can support their very considerable overhead. If the market is stagnant, the appreciation of value in their inventory does not compensate for their lack of sales volume.

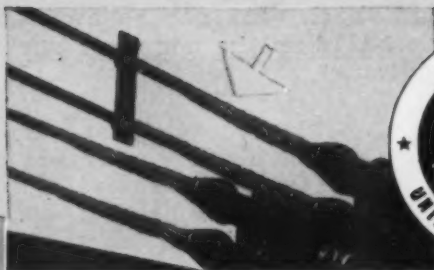
## MOBILIZATION AGENCIES GREATLY EXPANDED

Best indication of the rapid expansion of the materials and price control systems is the buildup in the staffs of the National Production Authority and the Office of Price Stabilization.

While still much smaller than the huge control machinery of World War II, the large amount of paper work which is being injected into the business cycle by materials control orders and price regulations will require processing by Government personnel, and this will develop further growth in the number of people required in Government.

Biggest problem currently, however, is not Government personnel at the paper handling stages, but administrative personnel of the caliber furnished by industry during World War II.

# Your boom support costs can be cut in half with



Vibration is effectively dampened here. Note how the interwoven end dampens vibration over a long section of rope instead of concentrating it at one point.



What does it cost you to replace a boom support? Figure the actual cash outlay, the lost production, labor, etc., and you'll quickly see the advantages of these new Fatigue Resistant Tiger Brand Cable Assemblies which assure 2 to 3 times longer life.

# these new Fatigue Resistant TIGER BRAND Cable Assemblies

An exclusive development of AMERICAN STEEL & WIRE COMPANY

Why these boom supports last 2 to 3 times longer. Excessive vibration is the chief cause of boom support failure. In old style boom supports, vibration is concentrated at the *point* where the rope enters the socket. This causes the wires to break from fatigue. In this new assembly, the effects of vibration are dissipated over a long section instead of being concentrated at one point. The result is two to three times longer life for boom supports and much greater safety.

The new Tiger Brand Assembly has a novel design which embodies *interwoven* eye-end and open-end thimbles which makes these pendants easily and quickly interchangeable on standard equipment.

You also save replacement time. If the machine is down for two or three hours

while new boom supports are being installed, you lose that much production time. Longer life from our new supports *results* in fewer replacements. This means clear profit if you use the new Tiger Brand Supports.

**Order your next boom supports now.** The new Fatigue Resistant Boom Supports can be easily and quickly adapted to your present equipment because essential dimensions such as pin diameters, distances between ears, etc. are the same as for standard open and closed sockets. Send the coupon for complete information.

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UNITED STATES STEEL EXPORT COMPANY, NEW YORK

American Steel & Wire Company  
Rockefeller Building, Dept. G-7  
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## AMERICAN TIGER BRAND WIRE ROPE

*Excellay Preformed*

UNITED STATES STEEL



*A typical cross-section assortment of file-steel stock. Sixteen such bundles weigh approximately a ton.*

## NICHOLSON FILES . . . A FILE FOR EVERY PURPOSE

### How to s-t-r-e-t-c-h a ton of steel

No one needs to be told that one of the nation's most critical materials today is STEEL. With allotments for civilian use being cut, conserving what remains is the duty of every manufacturer and user of industrial tools.

Among the most vitally needed tools are files. Steel is the only material from which they can be made. The supply must be "stretched":—

**1 By putting the utmost wear and efficiency into every file . . .** for it takes no more steel to produce carefully shaped, accurately cut, properly hardened files than to turn out poorly made, short-lived ones. That's "stretching" steel in the *making* of files . . . in which Nicholson is doing its part wholeheartedly.

**2 By proper selection, use and care of The right file for the job.** That's "stretching" steel in the *using* of files. In all of these directions, the industrial distributor can help the industrial user. The purchaser, in turn, can add to the "stretch" by enforcing the "Do's" and "Don'ts" of file conservation among his production heads, tool-keepers and mechanics.

**3 By screening down (for the duration) purchases of near-duplicate file types, cuts and sizes—that is, making one file specification do where two nearly-alikes are normally desirable.** Here's where all three—manufacturer, distributor, user—can contribute to "the stretch of files and steel."

"**FILE PHILOSOPHY**," Nicholson's famous 48-page handbook, has many hints on use and care of files. FREE—how many copies do you need to pass around among your shop foremen?



NICHOLSON FILE CO., 28 Acorn Street, Providence 1, R. I.  
(In Canada, Port Hope, Ont.)



# Modernize

## YOUR CATALOG AND BULLETIN FILES

Bring Your Source Information Up-to-date on New and Improved Equipment, Products and Materials. This is the first of — FIVE Pages Listing the Latest Trade Literature! Check All Five — 19, 21, 22, 24 and 174! A special listing of catalogs and bulletins on office equipment and supplies will be found on page 174. Additional information about New Products described on pages 128 to 172, use the coupon on page 128.

### Information on 55 Chemicals

1. IF you use any of the 55 industrial chemicals—from acetic acid to zinc thiocynate—made by Tennessee Eastman Company, Division of Eastman Kodak Company, you'll want the new catalog describing them. It includes specifications, properties and typical uses of each chemical. Also given are solubility data covering 20 of the 23 Eastman aromatic compounds. A two-page chart lists the fields in which each chemical finds use.

### Transformer Buyer's Guide

2. PERTINENT buying information on General Electric instrument transformers is available in a 93-page brochure. Various sections offer technical data on indoor and outdoor potential transformers, current transformers, metering outfits, potential and current portable transformers. Listings of ratio and phase-angle tests, coupled with tables covering the mechanical and thermal limits of current transformers are also given. General Electric Meter and Instrument Divisions, Schenectady 5, N. Y.

### Complete Speed Reducer Line

3. WHICH speed reducer is best for this application? Two bulletins of Dodge Manufacturing Company help you simplify selection of a shaft-mounted speed reducer from what is called the most complete line offered by any manufacturer. A-470 covers the Dodge double re-

duction Torque-Arm series. A-602 gives data on single reduction series of the Torque-Arm reducers. All you have to know is the hp required and the speed and size of the shaft to be driven. Dodge Mfg. Corp., Mishawaka, Ind.

### Stainless Steels

4. EXCELLENT corrosion resistance with high strength and hardness, good fabricating characteristics, and ability to be hardened at low temperatures are the features of Armco precipitation-hardening stainless steels 17-4 PH and 17-7 PH. Complete information on properties, available forms and fabrication of both are contained in a new booklet.

### Packaging Paper Samples

5. DEFENSE orders are beginning to spread around and an important thing to remember in anticipating

them is that packaging must conform to strict specifications. H. P. Smith Paper Company's catalog covers materials for government packaging to meet Joint Army-Navy B-121 and JAN P-117 specifications. It contains actual samples of each grade, accompanied by test data and characteristics. All grades are produced by coating, laminating, or impregnating.

### Materials Handling Equipment

6. THERE'S a piece of equipment for almost any materials handling job you want to perform these days. Yale & Towne Manufacturing Company's Philadelphia Division makes a wide variety of products for these operations, all described in a new catalog. It contains general description and application data on Yale's gas and electric fork lift trucks, motorized hand trucks, hand lift trucks, and hand and electric hoists.

(Continued on page 21)

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# CIRCUIT BREAKERS SAVE PRODUCTION TIME



Circuit breakers hold harmless momentary overloads...but trip quickly on shorts. Eliminate needless "down" time.

Circuit breakers can be easily re-set by anyone. No live parts exposed. Nothing burns out...nothing to replace. There's no delay.

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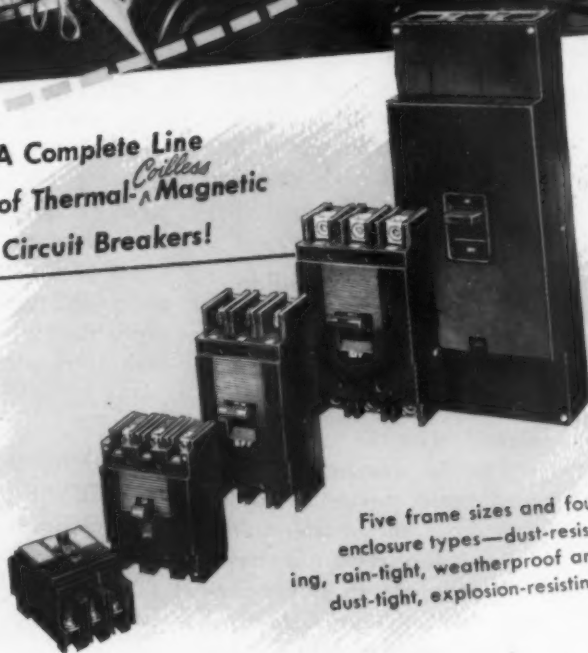
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Thermal element responds to heating effects of both load current and surrounding atmosphere. Total temperature is limited to a safe value.

Magnetic element responds instantly to heavy overloads or shorts. Damage is minimized.

**Both Elements are needed  
for Complete protection!**

## A Complete Line *Coilless* of Thermal-Magnetic Circuit Breakers!

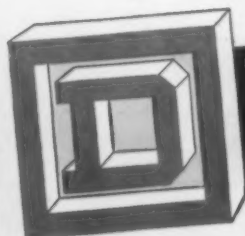


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DETROIT

MILWAUKEE

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SQUARE D COMPANY CANADA LTD., TORONTO • SQUARE D de MEXICO, S.A., MEXICO CITY, D.F.

(Continued from page 19)

A versatile group of attachments is also covered.

### How To Save On Pallets

7. FORTY-ONE ways to save by using expendable pallets are detailed in a booklet offered by the Addison-Semmes Corporation. The main sections deal with: savings to the shipper, who is (a) palletized but not shipping on pallets and (b) already shipping on wood pallets; savings to the receiver; savings to the carrier.

### Custom Steel Parts

8. "CUSTOM-MADE", flat steel parts, made to your exact specifications are featured by Henry Disston & Sons, Inc. A new booklet explains the set-up of the Disston plant, and the story of the company's know-how in the steel specialties field. Most replaceable flat steel parts requiring hardening, tempering and machining to close tolerances can be turned out by the plant. Practical advice on how to order—how many blueprints, samples, etc.—is included.

### Hand Trucks, Dollies, Platform Trucks, Service Trucks

9. FROM two-wheel trucks for light and medium duty to mopping equipment trucks, new catalog covers a widely diversified line of the lighter types of materials handling units. There are fifth-wheel platform trucks, canvas bag trucks, box trucks, marking tables and package trucks—all illustrated and described in catalog of 28 pages, No. 118, available from The Kilbourne & Jacobs Mfg. Co.

### New Plastic Molding Material High Impact, Low Pressure Molding

10. BULLETIN describes Bolatron, a new high-impact, low-pressure molding material that combines many of the outstanding characteristics of both synthetic rubber and plastic. It features almost unlimited formability with tremendous impact-resistance, and molds readily into simple and complex forms. Wood, aluminum, sheet metal and composition molds can be used, as

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well as virtually all standard forming methods. It is tough, waterproof, stainproof, grease-proof, light in weight and has exceptional chemical resistance. Bolatron is available in sheets in standard sizes and thicknesses, and in standard and special colors. It ranges in hardness from flexible to rigid. The finish may be mirror, matte, grained or patterned. Bolta Products Sales, Inc.

### Textile Leathers Shown with Realistic Accuracy

11. TWENTY-four handsomely illustrated pages present the Orange Line of textile leathers. They illustrate the products in exact size relationship and the color of each piece of leather shown is with as realistic accuracy as modern lithography can achieve. The Orange line of loom leathers, the Hairitan tannage, and the improved tapes and aprons, are explained in detail. Graton & Knight Co., and Dixie Leather Corporation.

### End Mills for All Purposes

12. BOOKLET on "End Mills for All Purposes" is completely new and contains listings for over 500 types and sizes of P&W end mills and related tools, including a number of new items, such as Hi-Helix heavy duty end mills, die sinking cutters with spiral and straight flutes, and new end mill holders. There is also a section on end mill technical data which includes terminology, tips and reference material on feeds, speeds, coolants, sharpening, inspection, etc. Pratt & Whitney.

### New Publication on Boxes and Crates

13. A NEW publication "Boxes and Crates" discusses the various strength properties required in lumber for the proper performance of all kinds of packaging. The importance to the shipper of seasoned lumber is also reviewed. Properly

dried lumber provides a more attractive package and is by test 65 to 75 percent stronger than green lumber. "Boxes and Crates" is illustrated with designs of the accepted types of packaging, the corner construction, and bracing. A table of grade recommendations and another of nail sizes is also included. Southern Pine Association.

### Self-Sealing and Self-Adjusting Packing Rings

14. R/M Vee-Flex packing rings, made in five types, self-sealing and self-adjusting are illustrated and described in new bulletin. The Vee-Flex rings have a convexly curved surface, with resultant flexing action which automatically produces a seal. The design distributes pressure horizontally against the stuffing box wall and shaft as well as vertically against the next ring. They have proved their efficiency and reliability in valves, pumps, and a long list of other equipment. Raybestos-Manhattan, Inc., Packing Division.

### Complete Catalog on Electrical Fittings

15. A HANDY, compact, easy reference manual, fully illustrated, gives catalog number, price and weight of complete line of O.Z. electrical fittings. These include conduit fittings, cable terminators, cast iron boxes, solderless connectors, power connectors, grounding devices, etc. All necessary information is indexed three ways — by photo, product name, and catalog number. Check No. 16 for copy of catalog 130. O. Z. Electrical Manufacturing Co., Inc.

### Treaded Leather Belting for Power Transmission

16. INFORMATIVE 16-page booklet on belting, well illustrated, contains information on making belts endless on pulleys, types of motor bases, fasteners, lacings, cement preservatives and repairing belts. Patented tread feature and the special mineral tannaged used in the manufacture of Vim Tread belts are graphically described with photographs and diagrams. Other types are also described with illustrations

(Please turn to page 22)

(Continued from page 21)

of specific applications. E. F. Houghton & Co.

### Marking Machines for Printing Cartons, Bags, Shooks, etc.

17. CATALOG describes marker for conveyor line use which automatically dates, codes or marks production runs of cartons and packages, and marking machines for imprinting cartons, multi-wall bags, wooden shooks, etc. Illustrations include special markers for cigarette cartons, egg cartons, wood boxes, and also an "automatic return" printing roller. The Industrial Marking Equipment Co.

### Floor Maintenance

18. TWELVE-PAGE brochure illustrated by numerous photographs, diagrams and drawings, "Floor Maintenance", presents a complete, effective and economical program for the care of wood and concrete floors, and for terrazo, linoleum, tile, etc. Points discussed include wear resistance, appearance, sanitation, cleanliness, light reflectance; the use of sealers and hardeners, burnishing and buffing, waxing; the painting of concrete floors on, above, or below grade. The Tremco Manufacturing Co.

### Export Adhesives Meet Government Specifications

19. THREE export packaging adhesives that meet government specifications are subject of new folder. All are water dispersed, eliminating the hazard of inflammable solvents,

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and all develop excellent resistance to water upon drying. EC 824 for sealing flaps of fiberboard boxes retains its bond at temperatures from -40 to 140°F and can be applied by brush, spray or assembly line machinery; meets specification JAN-P-101, types I and II. EC 1025 for adhering caseliners meets specification Jan-P-140, types I and II. EC 1032 for adhering labels and overcoating them dries tack-free in 6 to 7 minutes; meets ordnance specification AXS-1472, types I, II, III and IV for use on fiberboard, wood, black iron and galvanized iron surfaces. Minnesota Mining and Manufacturing Co.

### Industrial Lighting Booklet Lighting-at-Work

20. NEW 16-page booklet, B-4727, stresses three "lighting-at-work" factors: cutting cost by making possible increased production; increased efficiency by ensuring accuracy; and reduced accidents by clearly exposing dangerous operations. The booklet analyzes the three modern light sources (fluorescent, mercury vapor, incandescent) as to type of light, efficiency, lamp life, maintenance, mounting height, and job suitability. Special lighting for special areas is illustrated, such as dust- and vapor-tight units for service in corrosive atmospheres,

and bin and stack luminaires that direct light into bins and stock rooms. Westinghouse Electric Corp.

### Tells How Telechron Can Aid Military Equipment Manufacturers

21. TWENTY-PAGE booklet contains a complete description of facilities of Telechron Inc., and the capabilities of the company for carrying through small, intricate electro-mechanical assemblies from original design or prototype to mass production. Machines are not merely listed, but their types and capacities are given and the number of machine hours of work per month based on two 8-hour shifts per day.

### Popular Cutting Tools

22. TOOLS in most demand from Severance Tool Industries, Inc., are detailed in a new "All Star" catalog. Features include a graphic index of what is called the largest midjet mill stock in the world, and a telegraphic code for simplifying ordering.

### How to Solve Pumping Problems

23. "HOW to Solve Pumping Problems" explains in simple language the different steps to follow in selecting the proper pump—size, pump lift, discharge head, hp required and other factors; contains installation instructions, and how to order parts. This 32-page booklet also contains a variety of technical data tables. Geo. D. Roper Corp.

### When, Where and How to Use Refractory and Insulating Materials

24. NEW catalog shows where, when and how to use refractory and insulating materials of various types in industrial heat processing and heat generating equipment of all kinds. Refractories include castable cements, chrome base castable cements, bonding cements—air and heat setting, and ramming type. Insulating materials include blocks and blankets, plastic heat insulations, fill insulations, electrical insulations and surface protective

(Please turn to page 24)

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# MACWHYTE SLINGS AT WORK

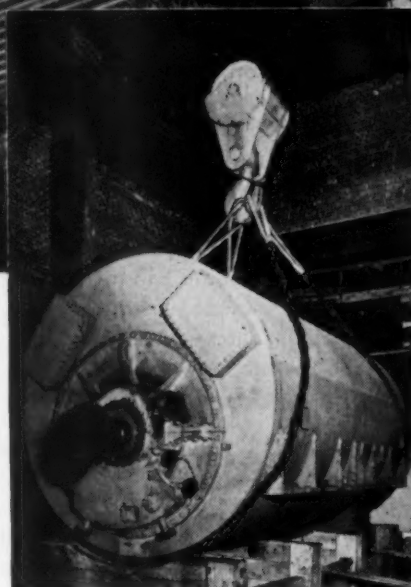


▲ Macwhyte DREW Type 1 Flat-Braided Slings handle loose bundle of steel pipe

Macwhyte MONARCH Cable-Laid Grommets handling large casting



▶ 125-ton generator unit handled with Macwhyte ATLAS Type 1 Round-Braided Slings



In hundreds of plants across America, Macwhyte Wire Rope Slings are standard lifting equipment. These slings are made to order to handle any type or size of load. A special braided construction, developed by Macwhyte, assures maximum flexibility and safety. For sling recommendations call a Macwhyte distributor or write to Macwhyte Company. Catalog on request.

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2918 Fourteenth Avenue, Kenosha, Wisconsin.  
Manufacturers of Internally Lubricated PRE-formed Wire Rope, Braided Wire Rope Slings, Aircraft Cables and Assemblies, Monel Metal and Stainless Steel Wire Rope. Mill depots: New York • Pittsburgh • Chicago • Minneapolis • Fort Worth • Portland • Seattle • San Francisco • Los Angeles. Distributors throughout U.S.A. carry stocks for immediate delivery.

Member National Safety Council



For cranes and hoists use PREformed Monarch Whyte Strand Crane Rope made by Macwhyte.

(Continued from page 22)  
coatings. Refractory & Insulation Corp.

#### 40% of Manufacturing Expense is Handling Cost

25. NEW Whiting Service book states that 40% of all manufacturing expense is Handling Cost. Illustrations show how the Tractmobile (which moves from road to track in less than ½ minute), the Tram-beam, Electric Chain hoists, overhead cranes, and Economy cranes, make for quicker handling and lower costs. Whiting Corporation.

#### Condensation Drip and How to Cure It

26. HANDBOOK gives valuable data on condensation drip, and tells how NoDrip can cure it; also, how NoDrip will aid in preserving pipe and other metal equipment by preventing rust and corrosion. This is a triple-duty insulation type coating in plastic form that can be used effectively in atmospheric temperature range of sub 0°F to 130°F. It can be used on metal, concrete, wood, brick, plaster or composition surfaces. It has a wide variety of uses, though it is not recommended where moisture may be caused by hydrostatic pressure or seepage, for underground pipe lines, as a means for preventing sweating in cold storage rooms, nor as thermal insulation. J. W. Mortell Co.

#### Synthetic Crystals for Industry

27. PRACTICAL data on synthetic single-crystal products are pre-

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sented in four-page booklet. Properties, available forms and uses of Linde synthetic sapphire, spinel, titania, calcium tungstate, cadmium tungstate, and fine alumina polishing powders are arranged in tabular form for quick reference. Illustrated uses include applications where extreme hardness, low friction, high dielectric strength and resistance to wear, heat and corrosion are required. Linde Air Products Co.

#### Single Phase, Polyphase and Direct Current Motors

28. BULLETIN illustrates and gives detailed information in regard to Wagner single phase motors, polyphase, and squirrel phase motors. Thirty-four motors are illustrated. Wagner Electric Corporation.

#### Non-Metallic Sheet Materials For Special Requirements

29. IF you are seeking non-metallic sheet materials for special requirements, you will want the descriptive sheets on the Duroids which have been issued by Rogers Corporation. Duroids are fibrous sheet materials blanketing the range of materials characteristics from laminated plastics to paperboards. Complete data on each of the eight new

products is given on the sheets, together with pictures illustrating typical applications.

#### Power Units For Stud Welding

30. TWO power units specifically designed to improve and extend the advantages of studwelding (Nelson weld method of fastening) are described in new bulletin. One is a small compact power unit which gives stud welding performance equivalent to two conventional 400-amp. generators in parallel. It can be used to weld studs up to and including 5/8" in diameter. The other is a battery unit with a self-contained automatic charging device which is operated from 110-volt AC convenience outlet. This unit welds studs up to 1/2" and can be transported in trailer units. Nelson Stud Welding Divn., Morton Gregory Corp.

#### Tells How to Select Laminated Plastic Sheets, Tubes and Rods

31. HANDY table which is designed to help specifiers and buyers select the proper grade of laminated plastic sheets, tubes and rod, correlates at a glance all systems of grade specifications as drawn up by industry and various Government agencies. For tubes and rod stock, specifications include Synthane, NEMA, Military specifications, Military type, Navy 17-P-5 type, JAN-P-79 (Type LTS) and ASTM designations as applied to eight grades of rolled tubes, 10 grades of molded tubes and 10 of molded rods. Grade designations of sheet materials are extended to cover: Synthane grade, Military, Military specification type, JAN-P-13 (Type LTS), Navy 17-P-5, Army 71-484, ASTM, and Federal specification HH-P-256 by both type and grade coding. Synthane Corp.

#### Saw Blades

32. CATALOG features rip saws, cut-off saws, combination saws, combination saws for portable electric hand saw machines, hollow ground combination saws, and semi-high speed circular metal cutting saws. The saws are clearly pictured and with each one is a magnified line drawing of the type of teeth it has. Stock list shows diameter, gauge, number of teeth and type of teeth for each blade. The Blade Manufacturing Co.

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Wire and Cable Division  
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Round Enamelled and Formvar Single Cotton. Round Double Cotton

Round, Rectangular and Square Double Paper Single Cotton

Round, Rectangular and Square Vega Chromoxide

Tinned Copper Wire

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Ignition Cable Neoprene Sheathed

Low Tension Cable Color Combinations

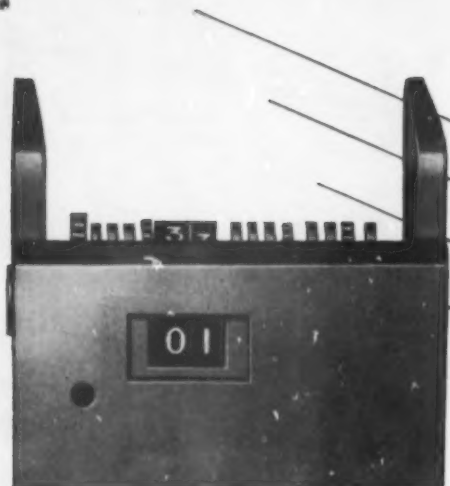
Battery, Starter and Ground Cable

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comes from counters like these...  
because every branch of the service...  
in fact...*

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Shown here are an aircraft and an artillery counter. What they do, and how they do it, is "nobody's business" but that of the military personnel using them. And now, what might we do for you? If you have an important military job on hand, you can count on us to help you just as quickly as

our present military commissions will permit.

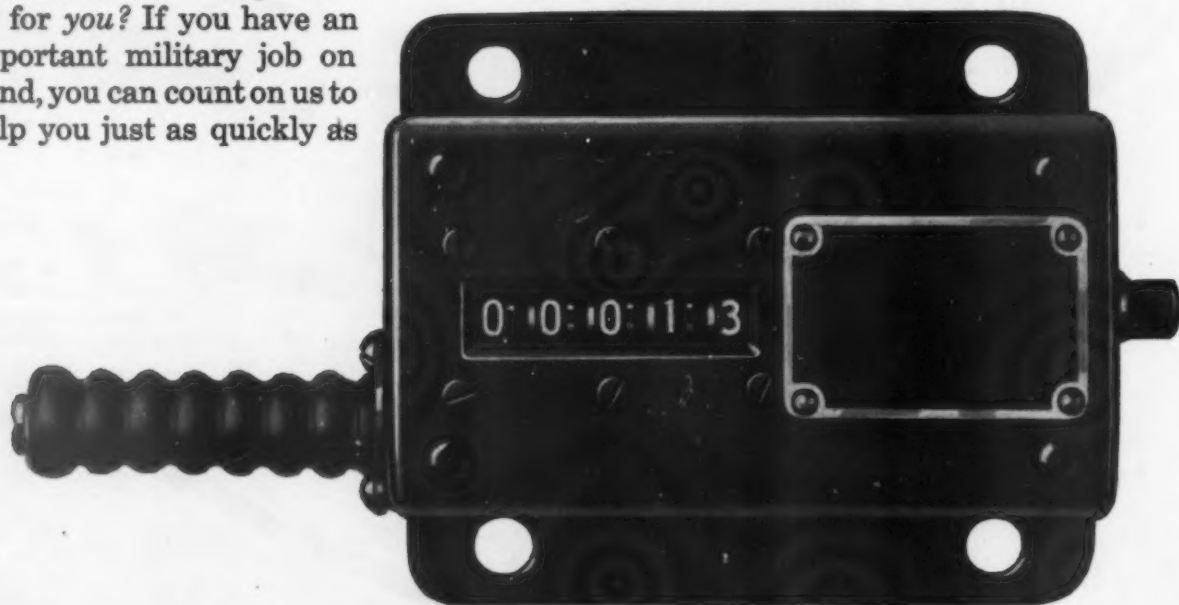
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*Offices and agents in principal cities*



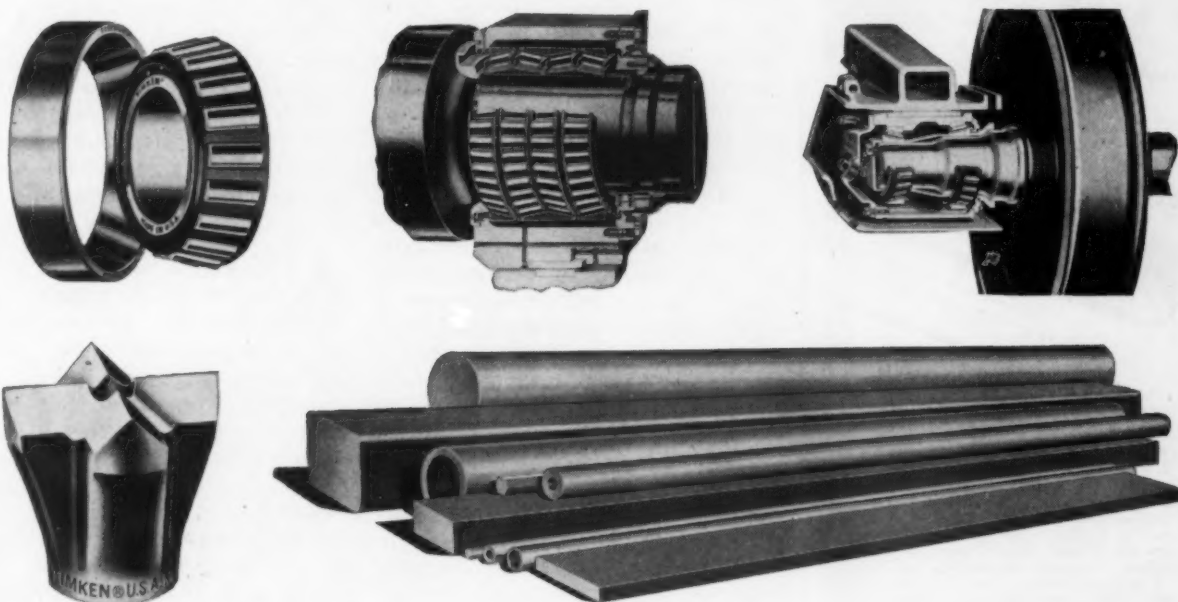
**VEEDER-ROOT**

**COUNTERS**

*"Count Everything on Earth"*

# TIMKEN

TRADE-MARK REG. U. S. PAT. OFF.



## Little words that mean a lot

There's no room for compromise, doubt or question in those brief words above. They mean: "Timken" is the registered trade-mark of The Timken Roller Bearing Company. And that meaning is mighty important to you.







The trade-mark "Timken" assures you of getting the highest quality tapered roller bearings, fine alloy steel bars, steel tubing or rock bits—all products of The Timken Roller Bearing Company.

That's why it pays to remember that "Timken" is a trade-mark, not a type of product. That it isn't really a product of the Timken Company unless it's backed up with this trade-mark.

Why not make it a habit to look for the trade-mark "Timken" when you buy tapered roller bearings, alloy steel bars, tubing or rock bits. The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ontario. Cable address: "TIMROSCO".

# TIMKEN

TRADE-MARK REG. U. S. PAT. OFF.  
TAPERED ROLLER BEARINGS

NOT JUST A BALL  NOT JUST A ROLLER  THE TIMKEN TAPERED ROLLER  BEARING TAKES RADIAL  AND THRUST  LOADS OR ANY COMBINATION 

JULY, 1951

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**MILFORD**  
FLEXIBLE  
REZISTOR  
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**IN EVERY MILFORD  
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MILFORD Flexible REZISTOR hand blades are truly flexible—practically indestructible—hack saw blades! They bend, twist and cramp—but do not shatter! And, in power sizes the Flexible REZISTOR is unrivaled for toughness! Special MILFORD heat treatment builds incomparable resilience and superb cutting qualities into every power Flexible REZISTOR. For a new experience in blade performance—buy MILFORD—THE BLADES BUILT BY EXPERIENCE. Note: As shown above, all Flexible REZISTOR hand blades feature exclusive MILFORD Easy-Starting Teeth.

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# F.O.B.



## FILOSOFY OF BUYING

THE current issue of *Stokes News*, company bulletin of the F. J. Stokes Machine Company, Philadelphia, reports that the purchasing staff has been doubled in recent months, besides working out a special liaison arrangement with the company's seven field sales offices to assist in procurement. Because the problem is one that is facing many a purchasing department in these trying times, the full explanation is of interest in showing how one company is meeting the situation:

"In a few brief months the materials procurement situation has so radically changed as to remind purchasing personnel of the most hectic days of the last war. Stainless steel, copper, bronze, aluminum and other ferrous and non-ferrous metals, cobalt, manganese and other alloy metals are either under allocation or in extremely short supply.

"Materials which could be bought a few months ago by making a local phone call and giving a purchase order number are now sought far and wide. New sources of supply must be located and, when found, continually expedited.

"In answer to such conditions, Stokes has not only doubled the size of its purchasing staff but has the help of the seven field sales offices of the organization. Personnel of these offices, under the direction of the field sales manager, have regular assignments as 'assistant purchasing agents' in procurement and expediting of materials."

FURTHER, the bulletin reports that the expediting staff has augmented its regular force of six men with six additional full-time expeditors, all of whom have been drawn from the sales staff. Commenting on this selection of personnel, the report goes on to say:

"It has many obvious advantages: the men are not only completely familiar with internal procedures

but their intimate knowledge of the equipment and personnel could hardly be duplicated. These men have been taken from their normal selling duties in an effort to maintain delivery sales in spite of longer supplier deliveries. Three of these men are following purchase orders in the usual way. Two are specializing in contact on machine shops only and one in contact on foundries alone. This cooperation between purchasing and sales departments in procurement is already proving highly effective in speeding the flow of equipment to customers."

ALL of this recognizes the fact that there is a large element of salesmanship and persuasion in today's buying technique. But in addition, there are also special emergency responsibilities in connection with sales effort in its customer relationships:

"The sales staff is modifying normal sales effort in recognition of drastically changed conditions. Among new activities which are in effect at present, the following may be noted:

"(1) The recent additions to the expediting staff were recruited from the sales department.

"(2) Salesmen still attached primarily to the sales staff help on field expediting and work on request from the purchasing department in locating scarce materials and new sources of supply.

"(3) A complete new line of instruction books on maintenance of Stokes equipment is in preparation for the use of customers in keeping equipment at top operating efficiency.

"(4) Stokes salesmen are active in helping customers in maintenance by on-the-spot service or, when needed, speedy appeal to the home office for the assistance of one of the emergency crew of service men.

"(5) Salesmen are trained to point out the versatility of avail-

able equipment and attachments so that customers can speed deliveries by using standard or quickly available equipment.

"(6) Salesmen explain priorities when necessary and help customers to follow correct procedures.

"(7) Salesmen cooperate with customers in studying and analyzing future needs."

• •

**T**HERE is a curious contradiction of terms when a decision of the Supreme Court declares that "fair trade" is unfair. But the error does not rest upon the august jurists. Rather, it has its roots in the original error of permitting the use of the "fair trade" label to be used, propaganda-wise, for an act that should have been more accurately designated as "resale price maintenance". Trade-mark law rules out the protection of any common descriptive word to designate a particular product. Maybe the "fair traders" will contend that fairness is so uncommon as to be outside of this well established principle.

• •

**P**ENDULUM action being what it is, the immediate swing to some excesses in price cutting was easily predictable. But there are some very healthy by-products of this development.

It shows the absurdity of the claim that the chief objective of the price fixer is to prevent "pricing his product beyond its value".

It has focussed public attention on the cost of distribution and price margins capable of "absorption" by some one other than the long suffering consumer.

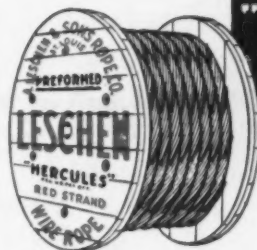
It has revitalized the concept of competitive business practice, which we have consistently and enthusiastically hailed as one of the foundation stones of industrial progress and opportunity. If we are sincere in that creed, the practice deserves more than tongue-in-cheek lip service.

It has given added strength to the current national program of price controls in the battle against inflation.

It may convince legislators that acts of expediency and emergency should be keyed to those temporary conditions which they seek to counteract or control, and not be permanently written into a code of American life while the economic cycle moves on into phases that may reverse the basic problem.

## Yes, Just a Piece of Wire BUT...

upon its quality and fabrication depends the kind of wire rope service you will get.



**"HERCULES"**  
RED-STRAND  
the **DEPENDABLE**  
WIRE ROPE  
for **TOUGH JOBS**

REG. U.S. PAT. OFF.

If this wire goes into a rope of 6 x 19 Seale Construction with a fiber core, it will be just one of 114. But if it is a "HERCULES" (Red-Strand) Wire Rope, every one of the 114 wires will have been rigidly tested to our exacting standards as to all essential properties. Furthermore, the rope will have been designed and fabricated according to the most advanced methods of manufacture.

Only by strict adherence to such principles, can the highest quality in wire rope be produced—consistently. It is never a matter of chance.

Because of long experience and the exacting care always used in making "HERCULES" (Red-Strand) Wire Rope, you can depend on it for safe and economical service. Made in a wide range of constructions—either Preformed or Non-Preformed, there is, in this one grade, a "right rope" for any heavy duty job.

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# Backstand Method Saves Time!

## Toledo Steel Tube Co. saves 2 hours per operator per day in finishing department

The Toledo Steel Tube Co. uses the backstand belt method to remove burrs and grip marks from the tubing. This company points out the following advantages of the backstand belt method over the set-up wheel method:

- 1 Time is not lost in making set-up wheels. Formerly the operators were given 2 hours a day for making their set-up wheels.
- 2 One backstand belt will outlast 4 to 5 set-up wheels for this application.
- 3 Belts maintain a flat surface for the grinding and polishing operation, whereas set-up wheels became rounded and needed dressing from time to time.
- 4 The uniform grit on the belts gives a much better finish on the tubes than did the rolled-on grit of the set-up wheels.

Manufacturers of hundreds of different industrial and consumer items have proved that the backstand belt method is more efficient and more economical than the set-up wheel.

If you are grinding, polishing or finishing flat or contoured surfaces, cast pieces, stamped pieces or forged pieces, the backstand belt method can help you with your production problems.

To learn more about the many advantages of the backstand belt method, write today for our free booklet.

We recommend buying through your industrial distributor



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Please send me the booklet "Facts about Backstand Belt Grinding and Polishing."

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# B.F. Goodrich GROMMET BELTS AT WORK



*Steel balls inside tube grind gypsum into powder for plaster, just as pebbles inside chicken's gizzard pulverize food.*

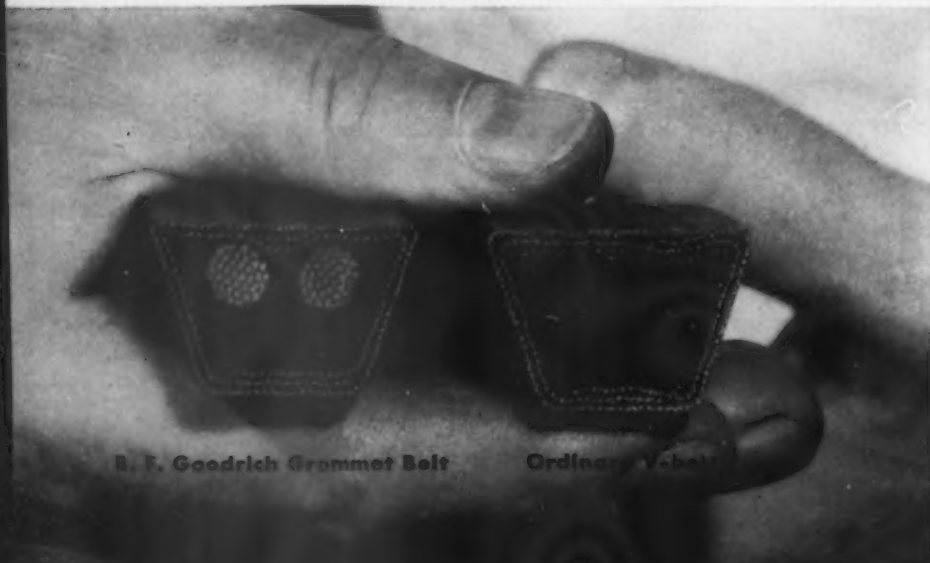
## **Steel gizzard makes plaster**

This tube, loaded with steel balls and gypsum weighs almost 100 tons. When the tube revolves it does a beautiful job of grinding the gypsum into powder for plaster, but *keeping* it revolving was a major job. It is driven by V belts. Trying to get the weight turning sometimes snapped these belts like so many pieces of string. Belts wore out before their time. An entirely new kind of belt was needed. To find out how the problem was solved, see the following pages.

## Steel gizzard (continued)



*Power drain of motor here is so heavy, machine is run only at night as belts whirl tube shown on preceding page.*



**B. F. Goodrich Grommet Belt**

**Ordinary V-belt**

THE only thing the plant manager had to do to solve the problem described on preceding page was switch from ordinary V belts to B. F. Goodrich grommet belts. These belts *look* the same but, because of an entirely different construction principle, grommet belts stand more shocks and heavier loads than any other kind. The B. F. Goodrich belts had been installed five years when these pictures were taken and still look good for many years more.

### **20 to 50% Longer Life**

Patented grommet belts by B. F. Goodrich represent the only basic change

since invention of the V belt. Belts last 20 to 50 per cent longer, depending on service. (The more severe the service the greater the increase over ordinary belts.) Grommet belts have more rubber; they're more flexible, give better grip, less slip.

### *What is a Grommet?*

A grommet is like a giant cable except that it's *endless*—a cord loop built up by winding heavy cord on itself. There is no overlapping cord *section* as in all ordinary belts. Most belt failures occur in these sections where cords overlap!

### *All Cords Put to Work*

Each grommet and every part of a grommet carries its share of the load. In ordinary belts under high tension the center cords "dish" because tension is greater near the driving faces. Dished cords are doing less work, not pulling their share. Grommet belts have no center cords, there is no dishing—therefore much more strength in proportion to cord volume.

### *Better Grip, Less Slip*

Grommet belts have more rubber in relation to belt size. Without any stiff overlap, they're more flexible, grip pulleys better. Size for size, grommet belts give  $\frac{1}{2}$  more gripping power, pull heavier loads with a higher safety factor. Because there is less slip there is also less surface wear.

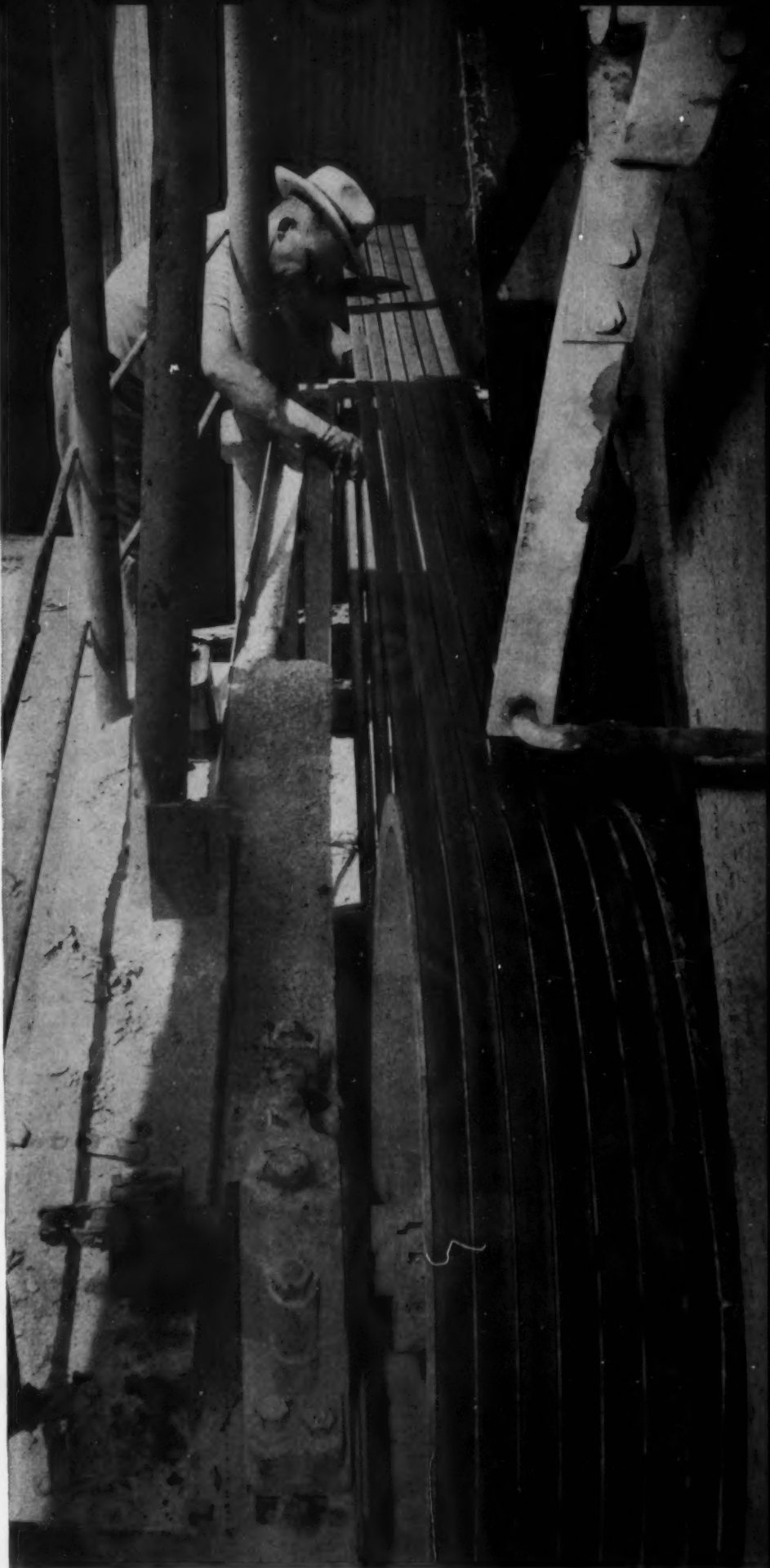
### *They Cost No More*

You save belt costs because belts last longer, save production costs because machines keep running with fewer interruptions, save maintenance costs because they need less attention, yet cost not one cent more than others. Grommet belts are made in C, D and E sections. They are patented by B. F. Goodrich. No other V belt is a grommet belt (U. S. Patent Number 2,233,294).

## Rock breakers ➡

Belts on rock crushers at the Walt Keeler Co., Wichita, Kan., get sudden shock loads. Ordinary belts here failed frequently, wore out fast. A local B. F. Goodrich distributor installed B. F. Goodrich grommet belts. After three years there had been no shutdowns whatever for belt maintenance.

Inside ordinary V belts made with multiple cords, there's a slight bump or "shoulder" where these cords overlap. This is the weak spot—over 80 per cent of belt breaks happen at this point. B. F. Goodrich grommet belts have no overlapping cords.



*Big drive at Walt Keeler Co., where BFG distributor solved shutdown problem.*

# B.F. Goodrich GROMMET BELTS AT WORK



*Why is one set of belts sagging and slipping while other set fits, runs perfectly? There's a big difference in cost too.*

## 7-day stretch

When first installed, both of these drives were equipped with ordinary belts. But within 7 days belts had stretched so much the motor had been moved to end of slide rail. Photo at left shows how belts looked—permanently stretched.

Then B. F. Goodrich grommet V belts were put on both drives. No stretch at all after 6 months of 24-hour-a-day service, as photo at right shows. Both sets cost \$75. Ordinary V belts cost \$10 a day; grommet belts 10 cents a day.

**The three preceding pages tell you why B. F. Goodrich grommet belts differ from ordinary V belts with actual examples to prove that they outlast ordinary belts—sometimes 10 to 1, at no extra cost.**

*Grommet V Belts* BY  
**B.F. Goodrich**

*The B. F. Goodrich Company, Industrial Products Division, Akron, Ohio*

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**Y**ou can't afford to wait, when replacing ignitions or other tubes. Delay means machine downtime, idled labor, stalled production. Nobody knows this better than your G-E tube distributor. *He wants to help you maintain peak output.*

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Usually he has on hand what your electronic panels require, though his tube stocks are more limited than they were. But when he doesn't have a certain tube, he'll turn handsprings to get you the right type fast. And G-E tube quality—G-E *proved* tube performance—will continue to distinguish his service.

Phone your distributor today! Or your G-E electronics office gladly will cooperate to put you in touch with him. *Electronics Department, General Electric Company, Schenectady 5, New York.*



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you down

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Nibroc towels are made by one company from timber-cutting to finishing. One Brown Company machine alone can produce nearly 30,000,000 towels a day.

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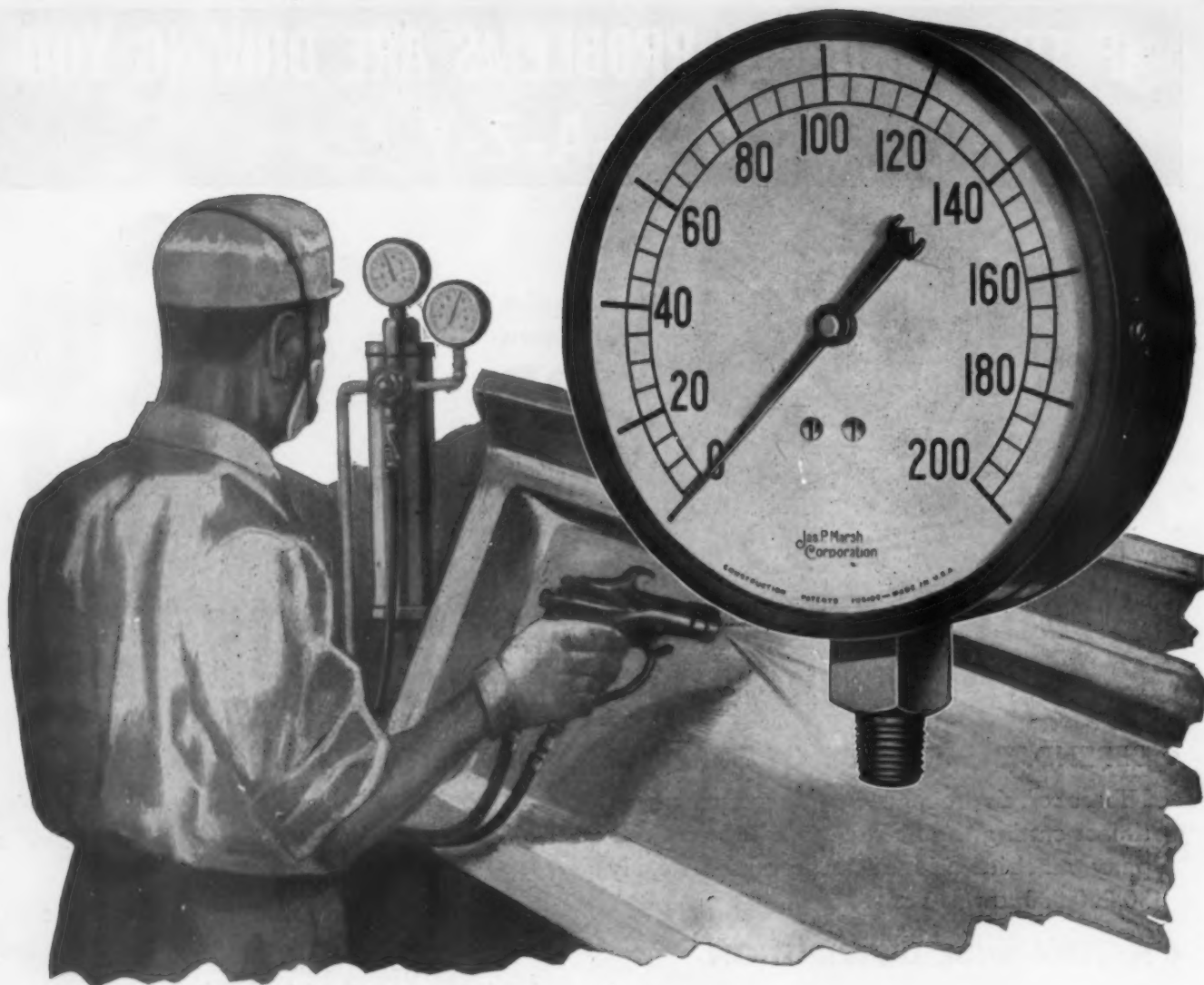
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Good paint spraying depends, not only on the equipment, or the skill of the operator, but equally on the pressure behind the gun. Whether the pressure is too high, or too low, or too uneven, or just right, only a pressure gauge can tell. If the gauge is wrong, the operator will be wrong, and so will the end results.

To entrust such important results to any but the best pressure gauges is obviously penny-wise practice. But because pressure gauges are such a familiar part of so many plant processes, it is easy to overlook the vital role they play in the efficiency and safety of all pressure equipment operation. Do not make this mistake. Remember that accuracy is meaningless un-

less it is lasting accuracy, and that it takes the kind of experience Jas. P. Marsh has had, the kind of facilities Marsh has developed, to build gauges of truly lasting accuracy.

Manufacturers of quality pressure equipment recognize this. A distinguished instrument, Marsh keeps distinguished company. Take the leading manufacturers in any field—boilers, hydraulic presses, compressors, food equipment, testing apparatus—and see what gauge they use on their equipment. In nearly every case you will find that Marsh is the gauge.

Make this your final reason for insisting on Marsh Gauges throughout your plant.

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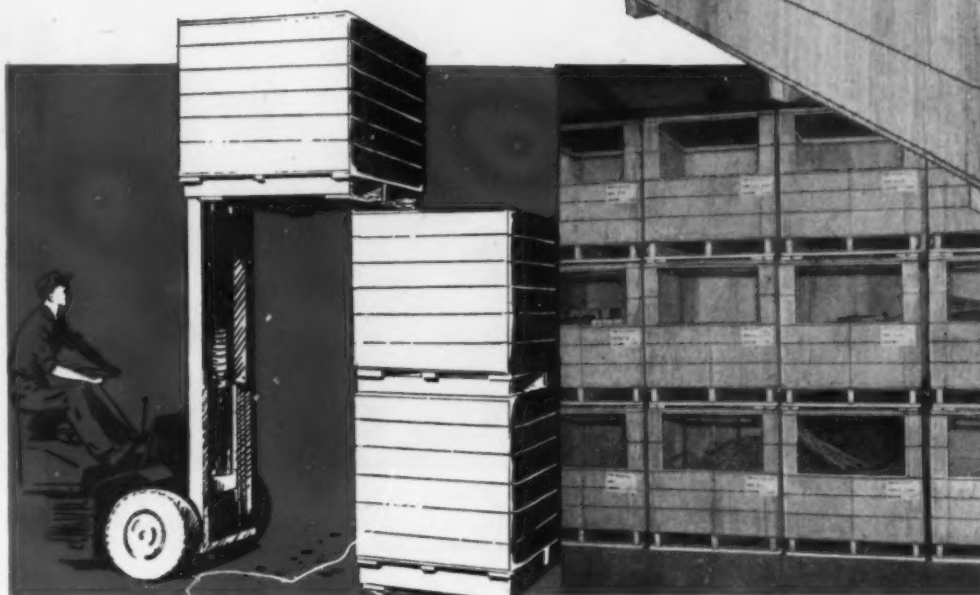
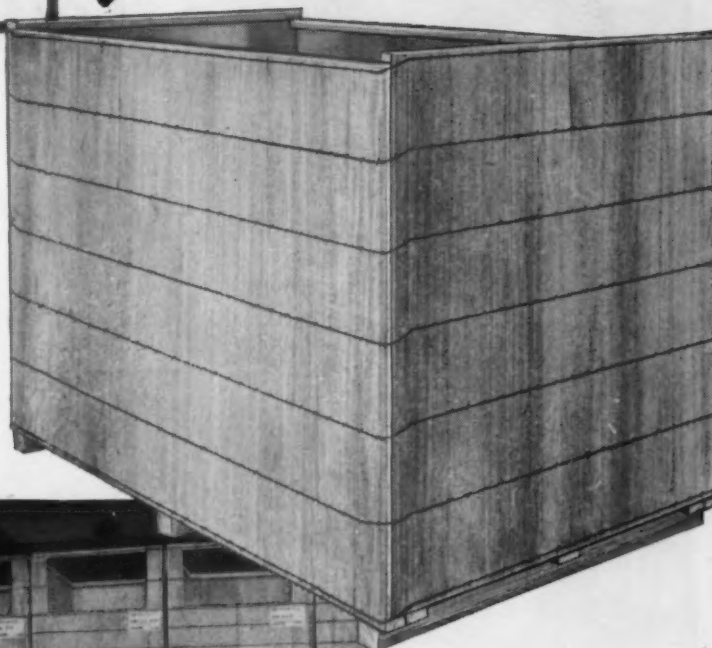
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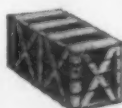
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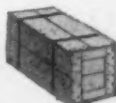
*engineered shipping containers*

**GENERAL OFFICES:**

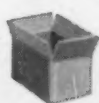
48 W. Illinois Street, Chicago 10, Ill.



General  
Wirebound  
Crate



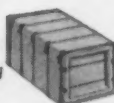
General  
Nailed  
Box



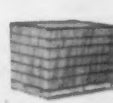
General  
Corrugated  
Box



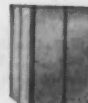
General  
Cleated  
Corrugated  
Container



General  
All-Bound  
Box



Generalift  
Pallet and  
Pallet  
Box



General  
Watkins-  
Type  
Box

# Cost-saving strategy that's right *"on the ball"*

• Fafnir LAK type Ball Bearing Pillow Blocks installed by the Ideal Industries of Bessemer City, N. C. for lap support rolls of Saco-Lowell high speed drawing frames in a leading textile mill.

When engineers of Ideal Industries Inc. achieved more than their principal objective in machine design . . . the elimination of costly and hazardous oil leakage through the application of Fafnir Ball Bearing Units . . . their strategy was regarded as "right on the ball". Because it involved ready-to-use "packaged" bearings, this strategy has industry wide significance.

By using standard Fafnir grease-lubricated Ball Bearing Units with Mechani-Seals, grease was positively retained . . . contaminants excluded. In addition, the designing and building of special housings and lubrication systems were avoided. What's more . . . because each unit has the famous Fafnir Wide Inner Ring Ball Bearing with self-lock collar,

no shaft shouldering, no lock-nuts, washers, sleeves or adapters were required. Installation was simple and fast.

In operation, the Fafnir Ball Bearing Units have proved extremely clean. They've needed lubrication only about once a year in contrast to once-a-week lubrication of old-fashioned bearings. And they've made roll starting easier . . . roll operation, smooth and even.

This application of Fafnir "packaged" ball bearing units is typical of hundreds of similar applications designed to save costs. Your authorized Fafnir distributor will be glad to discuss its possibilities in connection with your products or plant machinery. The Fafnir Bearing Company, New Britain, Connecticut.

PILLOW BLOCKS



... all types — light, standard, heavy . . . fixed and floating.

CARTRIDGES



... light and heavy series.

FLANGETTES



... with pressed steel flanges.

## FAFNIR

### BALL BEARINGS

MOST COMPLETE



LINE IN AMERICA

# Have you an **ASSEMBLY** problem that Black & Decker can solve?



**TAP IT** with a B&D TAPGUN. Cuts threads up to  $\frac{3}{8}$ " in mild steel, up to  $\frac{1}{4}$ " in brass or aluminum. Automatic reversing mechanism greatly reduces tap breakage.



**DRIVE IT** with a B&D SCRUGUN. Drives machine screws to  $\frac{1}{4}$ ", self-tapping screws to #12, wood screws to #10 x 2". Positive or adjustable clutch. 90° Angle model works in close quarters. Handle "free" or "gathering" assemblies.



**DRILL IT** with a B&D  $\frac{1}{4}$ " HOLGUN. Drills holes up to  $\frac{1}{4}$ " diam. in steel, up to  $\frac{1}{4}$ " in hardwood. Close-coupled, compact, only  $\frac{3}{4}$ " spindle offset.

## See how B&D HOLGUNS\*, TAPGUNS\*, SCRUGUNS\* can speed up your work!

What a team these famous *matched* Black & Decker "Power Triplets" make for speeding up assembly work! Their compact, balanced design, "Pistol Grip and Trigger Switch" make them easier to handle, less tiring to use, gets them into hard-to-reach spots. Their powerful B&D-built motors, tailor-made for each tool, mean non-stop performance. Their top-notch en-

gineering insures more accurate, more uniform work, fewer rejects, lower costs. Their extra-tough gears, shaft and chuck spindles and husky housings give you extra years of service to cut tooling costs. See your nearby B&D Distributor for expert help in tooling problems. Write for free catalog to: THE BLACK & DECKER MFG. CO., 664 Pennsylvania Ave., Towson 4, Md.

\*Trade Mark Reg. U. S. Pat. Off.

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**Black & Decker**  
PORTABLE ELECTRIC TOOLS

**WORLD'S LARGEST, MOST COMPLETE LINE**



**Life-Line motor**  
**PAIRED FOR PRODUCTION**  
**Life-Linestarter**

# ***ASSURE***

## **production schedules with these two**

Climbing production curves necessitate squeezing out every possible productive minute from every production machine. There's no time for motor and control "time out". Together or individually, Life-Line motors and starters offer the best assurance of continuous production. They are built to—

*STOP outages due to improper bearing lubrication.* Life-Line motors, with their pre-lubricated, sealed-for-life bearings, need no lubrication. Grease guns can be thrown away—motor lubrication schedules forgotten.

*STOP outages due to cracked and broken motor frames.* Life-Line motor frames stand up to the hard knocks of day-to-day use. They're steel. More protection is afforded with less size and weight. This rigid frame maintains bearing alignment and positive rotor air gap.

*STOP outages due to burned and pitted starter contacts.* Life-Linestarter's® exclusive "De-ion" arc quencher quickly extinguishes destructive arcs. The "De-ion" grid snuffs out arcs . . . contacts last longer.

*STOP outages due to inadequate overload protection.* Life-Linestarter prevents motor burn-out due to overloads. The bimetallic, snap-action, disc type of overload relay shoulders the burden. Precise calibration . . . not affected by aging or oxidation.

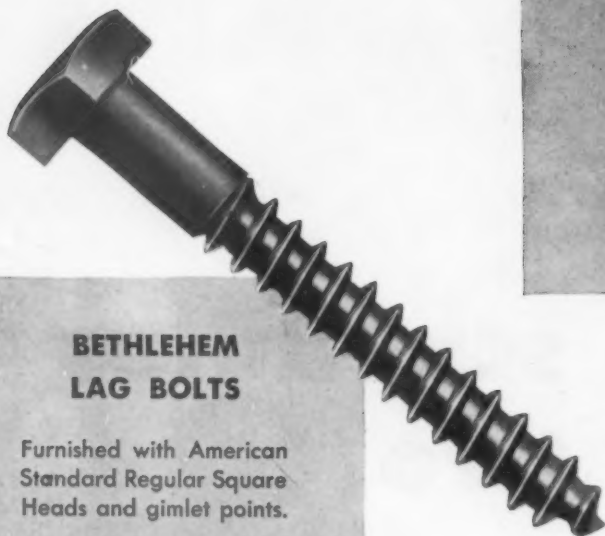
Other Life-Line features that will aid you in meeting increased production schedules are covered in "Life-Line Book", B-3842 and "Tomorrow's Starter Today", B-4677. Ask your Westinghouse representative for your copies. Or write to Westinghouse Electric Corporation, P.O. Box 868, Pittsburgh 30, Pennsylvania. J-21642

YOU CAN BE SURE.. IF IT'S  
**Westinghouse**

***Life-Line***

**MOTORS and CONTROLS**





### BETHLEHEM LAG BOLTS

Furnished with American  
Standard Regular Square  
Heads and gimlet points.

### BETHLEHEM CARRIAGE BOLTS

Have square necks, and  
either cut or rolled  
threads. They come with  
regular square nuts.



# Standard Bolts for Construction

Bethlehem turns out machine, carriage, and lag bolts in styles and sizes to meet virtually every construction requirement. Bethlehem's standard bolts have straight shanks, smooth-fitting threads, and heads which are easy to grip. They are furnished either plain or galvanized.

We also produce a full line of American Standard Regular or Heavy Nuts, both square and hexagonal.



### BETHLEHEM MACHINE BOLTS

Made in the following head styles: square, hexagon, button, counter-sunk (round or square), and tee. They are furnished with cut or rolled threads, and with milled bodies, if desired.

### BETHLEHEM STEEL COMPANY BETHLEHEM, PA.

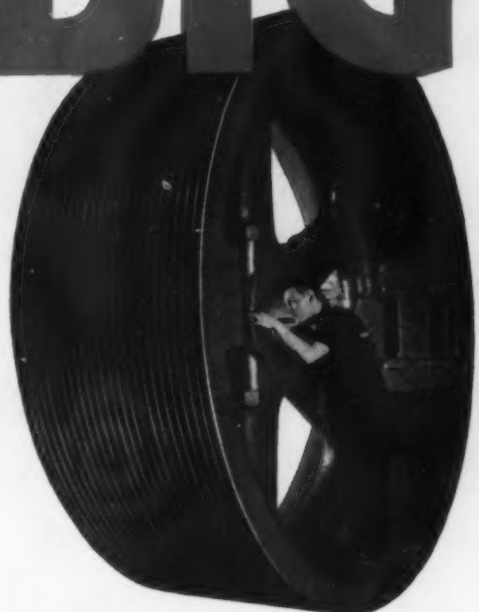
On the Pacific Coast Bethlehem products are sold by  
Bethlehem Pacific Coast Steel Corporation. Export  
Distributor: Bethlehem Steel Export Corporation



OTHER *Bethlehem* CONSTRUCTION FASTENERS • TIE-RODS • SPIKES • RIVETS  
TURNBUCKLES • CLEVISSES • SLEEVE NUTS • RIVET-BOLTS

# BIG or Small

## ...EVERYTHING IN V-BELT DRIVES!



**NON-STOCK SHEAVES** — These sheaves are made to order from stock patterns for A, B, C, D, or E belts, 1 to 1000 hp. For further information check with your *Texrope* drive dealer or Allis-Chalmers Sales Office.

**TEXROPE**  
Greatest Name in  
V-Belt Drives

**YOU CAN GET** every V-belt drive component from the *Texrope* line: Constant speed drives; standard and wide range *Vari-Pitch* drives; speed changers; motor bases; and new or replacement long lasting *Super-7* V-belts.

### Get Added Benefits

In addition, you get extra engineering skill both in the field and factory that

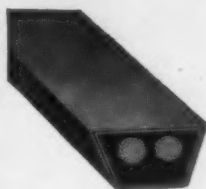
comes from having more industrial V-belt installations than any other manufacturer.

The world's greatest store of V-belt engineering knowledge has been condensed into a 120 page *Texrope* Pre-Engineered Drive Book. Covers 90% of all V-belt drive requirements. Ask your Allis-Chalmers Authorized Dealer or Sales Office for Bulletin 6956A, or write Allis-Chalmers, Milwaukee 1, Wisconsin.

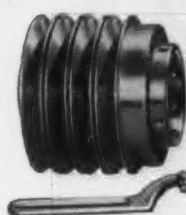
A-3272

*Texrope, Super-7, Vari-Pitch, Textsteel, and Magic-Grip* are Allis-Chalmers trademarks.

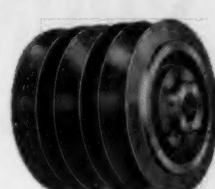
# ALLIS-CHALMERS



**SUPER-7 V-BELT** — Famous grommet construction. No splices where failure can start. Rubber cushion supports rayon cord at pitch line. Sizes and sections to suit all operating conditions. All Standard sizes from stock.



**VARI-PITCH STANDARD SHEAVE** — Speed range of 9% to 28% on drives of 1 to 300 horsepower, using A, B, C, D, or E belts. Two to 10 grooves. These sheaves are available in either motion control or stationary control.



**AUTOMATIC VARI-PITCH SHEAVES** — Offer stepless speed control . . . one to 40 hp . . . 2 to 1 speed range. Move motor forward to increase speed, and back to decrease. One hand does it while motor is running.



**MAGIC-GRIP SHEAVES** — Fastest mounting sheave you can buy. Aligns easily . . . cannot shake loose. 1 to 12 grooves for A-B, B, C, and D belts. 1 to 250 hp. Stocked in many cities for immediate delivery.



**TEXTSTEEL SHEAVES** — Pressed steel sheaves for applications from 1/4 to 25 horsepower. Light weight and rigid. 1 to 6 grooves, A or B belts. All sizes and bores are available for delivery from stock.



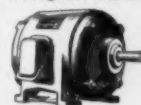
**VARI-PITCH SPEED CHANGER** — Smooth, accurate speed control at turn of hand wheel. Machines operate at exactly the speed for best production. Stepless speed range: 3 3/4 to 1. Capacity: 1 1/2 to 75 hp.

Sold . . .

Applied . . .

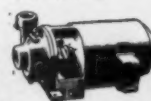
Serviced . . .

by Allis-Chalmers Authorized Dealers, Certified Service Shops and Sales Offices throughout the country.



**MOTORS** — 1/2 to 25,000 hp and up. All types.

**CONTROL** — Manual, magnetic and combination starters; push button stations and components for complete control systems.



**PUMPS** — Integral motor and coupled types from 3/4 in. to 72 in. discharge and up.

# SPONGEX<sup>®</sup>

cellular

rubber

*Prevents Frosting  
And Sweating*



"A-P Valve Insulator courtesy of A-P Controls Corporation, Milwaukee, Wisconsin."



Custom molded in one piece, Spongex cover opens, snaps closed around valve.

When this expansion valve is installed outside of low temperature apparatus a custom molded *Spongex* insulator prevents dripping which otherwise would damage the floor or equipment beneath. Besides its special shape the requirements of this part called for cellular rubber of interconnecting cell structure with natural skin on all exposed surfaces.

For many manufacturers, conversion is bringing new and different requirements for materials. Your needs in cellular rubber might call for **SPONGEX** similarly molded. Or a die-cut shape. Or a standard cord, tube, strip or sheet. Perhaps you seek the 0.28-0.30 K insulating factor of **SPONGEX CELL-TITE<sup>®</sup>** or the efficiency of **SILICONE SPONGEX** at  $-100^{\circ}\text{F}$  to  $450^{\circ}\text{F}$  Spongex stands ready to help you solve any problems you may have.

This new booklet on the properties of, test data on, and specifications for cellular rubber has just been released. It's concise, and a valuable reference source. Write for a free copy today.



*The World's Largest Specialists in Cellular Rubber.*

**THE SPONGE RUBBER PRODUCTS COMPANY**

404 DERBY PLACE

SHELTON, CONNECTICUT



## How to "wrap up" *improved production*

● If your production involves the application or forming of wire, consider this . . .

Because specialists at National-Standard's Worcester Wire Works probe *deep* into the development and behavior of special-purpose wires, they're often able to suggest modifications that boost production plenty! Sometimes, for example,

it's a modification that eliminates machine jamming and down-time. It might be a new or different finish that permits increased production speeds. Or, as often happens, it's an idea that gets the job done with *less* wire or other materials.

You can always count on Worcester Wire Works for service that goes further than usual—for special development help if you want it. And, in any case, you'll find in your National-Standard wire the uniformity, the adherence to specifications that in itself saves time and dollars!



**DIVISIONS OF NATIONAL-STANDARD CO.**

ATHENIA STEEL..Clifton, N. J.....	Flat, High Carbon, Cold Rolled Spring Steel
NATIONAL-STANDARD..Niles, Mich.....	Tire Wire, Fabricated Braids and Tape
REYNOLDS WIRE..Dixon, Illinois.....	Industrial Wire Cloth
WAGNER LITHO MACHINERY..Jersey City, N. J.....	Lithographing and Special Machinery
WORCESTER WIRE WORKS..Worcester, Mass.....	Round and Shaped Steel Wire, Small Sizes

$\frac{1}{4}$ " SIZE



No. 168



No. 169

$\frac{5}{16}$ " SIZE



No. 160

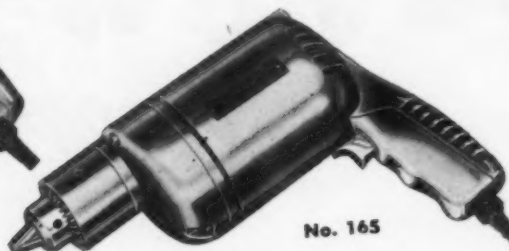


No. 161

$\frac{3}{8}$ " SIZE



No. 163



No. 165

# Here come the NEWEST Stanley Drills

Six brand new drills—all with the famous Stanley name—designed especially for heavy-duty production drilling. They're streamlined beauties and packed with surplus power for fast penetration through steel or wood.

Outstanding features include: full polished die-cast aluminum housing, trigger switch with locking device, seal-type ball bearings, three-jaw geared chuck, removable chuck guard to protect operator and finished surfaces. Available for all standard voltages, A.C. or D.C.

See them at your dealer's, or write for complete descriptive information. Stanley Electric Tools, 425 Myrtle St., New Britain, Connecticut.

**STANLEY**

Reg. U.S. Pat. Off.

HARDWARE • TOOLS  
ELECTRIC TOOLS • STEEL STRAPPING • STEEL

IT ALWAYS PAYS TO SPECIFY

# LADISH

*Controlled Quality*

PIPE FITTINGS



...to be sure  
of sound  
welds  
and fast  
assembly



TO MARK PROGRESS

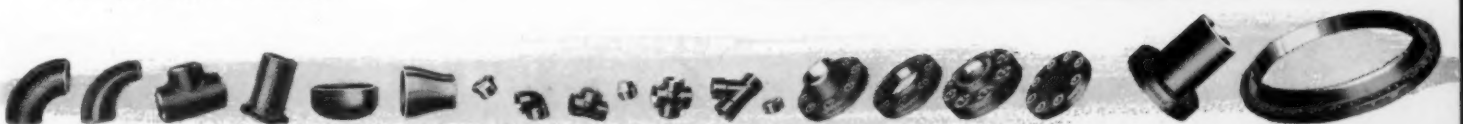
Keeping welding costs down to a minimum and erection schedules on time...these are important advantages you can assure to any piping job by installing Ladish Controlled Quality fittings. Metallurgical controls over materials and methods provide an assurance of uniform weldability in every Ladish fitting...and thorough inspection to rigid standards of physical dimensions and geometric accuracy assures fast piping assembly.

THE COMPLETE *Controlled Quality* FITTINGS LINE  
PRODUCED UNDER ONE ROOF...ONE RESPONSIBILITY

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MILWAUKEE SUBURB

District Offices: New York • Buffalo • Pittsburgh • Philadelphia • Cleveland • Chicago • St. Paul  
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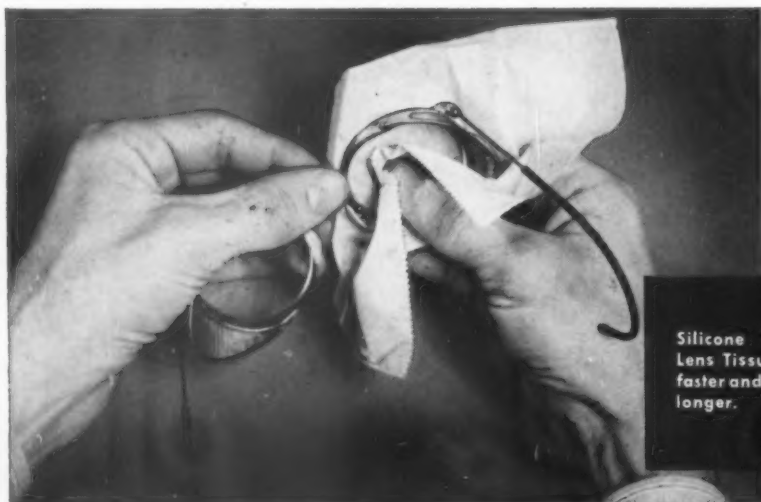
# AO Offers Magic Lens Tissue\* in a Compact Dispenser

**HANDY, THRIFTY...**

**KEEPS SAFETY GOGGLES CLEAN • CLEAR • POLISHED**



\*Treated by G. E. Co. silicones



Silicone treated Magic Lens Tissue cleans lenses faster and they stay clean longer.

Gently rub Magic Lens Tissue over a lens (safety goggle or personal glasses). Note how quickly dirt, dust, lint and smears disappear! This special optical cleaning paper of highest quality protects, too. By depositing an invisible coating of silicone on the lenses it makes each wiping *last longer* — and the next cleaning easier, faster. The tissue is strongly tear-resistant and sheets are over 50% larger than usual. 800 per packet.



**NO WASTE!** Only one sheet can be pulled at a time. Dispenser measures 3 1/4" x 7 1/4" x 3 3/8" — compact enough to fit almost anywhere. 20-gauge steel construction.

THE COMBINATION OF DISPENSER AND MAGIC LENS TISSUE MAKES LENS CLEANING SIMPLICITY ITSELF — HELPS YOUR SAFETY GOGGLE INVESTMENT PAY OFF!

**Your Nearest AO Safety  
Products Representative  
can supply you**

American  Optical  
COMPANY  
SAFETY PRODUCTS DIVISION

SOUTHBRIDGE, MASSACHUSETTS • BRANCHES IN PRINCIPAL CITIES

The compact, sturdy steel dispenser is a miser—thriftily dispenses only one sheet at a time. It always works — has no moving parts to go out of order, require service. What's more, its lock prevents pilferage. When refilling, simply unlock and insert refills as easily as a packet of hand towels. 4 wood screws are provided for quick, easy mounting in working areas, near vending machines, in rest rooms, reception rooms, first aid rooms, company garages, cafeterias, etc.

Important!  
Informative!  
Timely!



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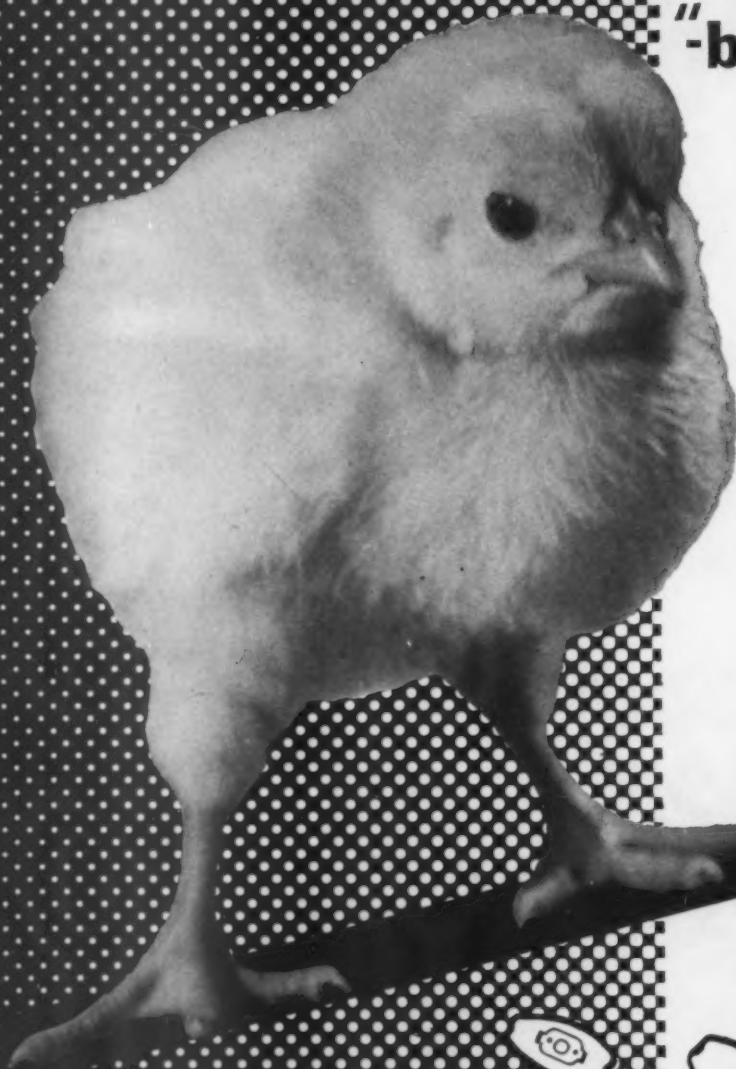
411 PIQUETTE AVE., DETROIT 2, MICH.

Here's valuable information for export packagers—3M Adhesives which meet Government Specifications for export shipping!

If you ship overseas—or plan to in the future—you should have this booklet. It lists Government Specifications, typical 3M Adhesives meeting these specifications, their description, properties and application.

We've made it our business to keep up-to-date on the latest packaging specifications and the adhesives which will meet them. Let us put this background to work for you.

Send for this important new booklet today. Write 3M, Dept. 77, 411 Piquette Ave., Detroit 2, Michigan.



**"-but my order  
is only  
chicken  
feed"....**

Not to us! Small orders for springs, samples, or experimental lots are made in special departments equipped through experience for just such service. Go to one of the plants below, when you need springs, in any amount.



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THE BEST ten SOURCES FOR MECHANICAL SPRINGS

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ASSOCIATED SPRING CORPORATION  
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# V.C. CABLE

**Wherever you need resistance to heat, oil and grease . . . specify Roebling Varnished Cambric**

AS LEADS for generators, transformers, motor and oil switches . . . for general distribution of heavy power loads in manufacturing and industrial plants, your top specification is Roebling Varnished Cambric Cable. . . . Roebling V.C. is made in single conductor sizes from 2,000,000 C.M. to #14 A.W.G.; in multiple conductor sizes from 750,000 C.M. to #14 A.W.G. It is recommended for use up to 17,000v between phases in single or multiple conductor construction; and to 26,000v for single conductor grounded neutral.

Large quantities of Roebling's complete wire and cable line are now required in the rearmament program. The Roebling organization and distributors will do their best, however, to meet your delivery needs. John A. Roebling's Sons Company, Trenton 2, N. J.

Manufactured with solid conductors or stranded in a variety of strandings, coated or uncoated, according to your needs. Available in single or multiple conductor.

Insulated with varnished cambric tape, in accordance with I.P.C.E.A. and Underwriters' specifications unless otherwise specified by you.

For outside covering you have a choice of braid, for service in dry locations; lead, for service in damp locations; and for aerial use or direct burial we recommend a protective armor such as steel tape or galvanized round wire armor.



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MEAT CURING



BATTERIES



SOAP

*For Quality Ammonium  
and Potassium Products*

*Specify*

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**AMMONIUM CHLORIDE**  
**AMMONIUM BICARBONATE**  
**CAUSTIC POTASH**  
**POTASSIUM CARBONATE**  
**SODIUM NITRITE**

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Sodium Nitrite • Para-dichlorobenzene • Ortho-dichlorobenzene • Monochlorobenzene  
Methanol • Ammonium Chloride • Formaldehyde

# There IS something YOU can do ABOUT INFLATION!

**Your future...  
the future of  
your business,  
large or small,  
depends on how  
many people  
understand  
the story in  
this booklet!**



*Businessmen recognize inflation as the nation's greatest single threat. But most of us have felt "What can one man—even one business—do to stop it?" But there is a way—if enough of us work at it. We can*

*help more people . . . the men and women who work and vote and pay taxes . . . to understand the nature of inflation, its causes and cures. Then we will have gone a long way toward eliminating this pending catastrophe.*

**ONE TOOL YOU CAN USE:** To help us give our own Bemis workers the inflation picture, we used the colorful, new 16-page booklet "How Stalin Hopes We Will Destroy America" produced by Pictorial Media, Inc. The more widely the booklet is used, the more good it will do . . . and it is available for distribution to your workers, too. It follows the time-proven "comic book" technique . . . dramatizes the dangers . . . and shows how all our citizens can help halt inflation before it's too late.

**TESTS SHOW IT HELPS WORKERS:** To get an impartial judgment of the value of "How Stalin Hopes We Will Destroy America," it was tested in Bemis plants by the Psychological Corporation under the direction of Dr. Henry C. Link, a foremost research authority.

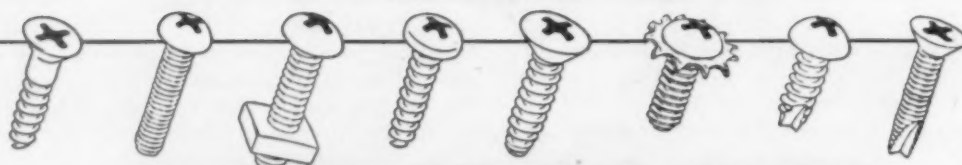
Dr. Link says "Those workers exposed to the booklet were found to have a significantly higher appreciation of the recommended ways to stop inflation than did the workers who did not see the booklet. Details of this test are available upon request." And Bemis factory workers make such statements as "Everything it says hit home, but you'd never figure it out for yourself

until you read it" . . . "It's told in an interesting way so anyone can understand. My daughter, age ten, understood all of it" . . . "In picture form it impresses you more. Most people don't read about it" . . . "Had ideas that we wouldn't think about otherwise while we are working away—good book, agree with it—I guess I won't be the only one."

Because we believe this message is growing more urgent every day, Bemis is taking this means to commend to other businesses this weapon against inflation. It is the first of a series of such material that we expect to use.

**BEMIS BRO. BAG CO.**  
St. Louis 2, Missouri

**FOR EVERY BUSINESS, LARGE OR SMALL:** In quantities, it costs only a few cents a copy—\$10.00 for 100 copies, down to 3 cents per copy in larger quantities. Single copy free. For full information, write **PICTORIAL MEDIA, INC.**, Attention: Paul Wheeler, 205 E. 42nd ST., NEW YORK 17, N.Y.



# **AMERICAN**

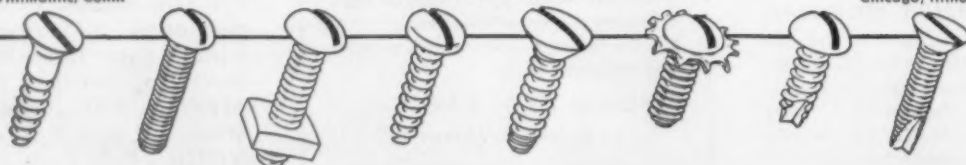
**Your PHILLIPS HEADquarters  
and SLOTTED HEADquarters**

**AMERICAN SCREW COMPANY  
Willimantic, Connecticut**

Main Office & Plant  
Willimantic, Conn.

Office & Plant, Norristown, Pa.

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All fluorescent lamps look alike. But all do not light alike, or last alike. Westinghouse fluorescent lamps burn brightly for 7500 hours. For one-shift plant and office use that amounts to 3 years, for stores, 2½ years. This kind of long-time service means less lamp replacement. So whether you're lighting a roundhouse or ranch house, specify this brand of quality.

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Ann <sup>A</sup>  
 Currycomb <sup>≡</sup>  
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 Seven Up <sup>UP</sup>  
 Bob on the Square <sup>BOB</sup>  
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Lamp Division,  
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 Bloomfield, N. J.

Send me more information on how I can save with  
 Westinghouse fluorescent lamps.

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 COMPANY.....  
 STREET.....  
 CITY.....ZONE.....STATE.....



"THE COILS IN OUR MAGNETIC REVERSING SWITCHES BURNED OUT EVERY TIME THE SILO GATES JAMMED, BUT THAT WAS BEFORE WE PROTECTED THEM WITH FUSETRON FUSES"

**"Sure!** you can quote me," continues Mr. E. C. Willy, Chief Electrician, H. J. Kaiser Co., Radum Plant, Pleasanton, Calif.

"In the past, we found magnetic reversing switches welded the main contacts when Silo Gates jammed. When reverse control operated, the armature could not properly engage, resulting in a burned out coil.

"The coils cost about \$4.00 each, but most important was the substantial production loss each time the coil burned out.

"We now have 4/10 ampere Fusetron dual-element fuses installed to protect these coils. During the year 1950 we blew about 100 Fusetron fuses, but didn't lose any coils. This represents a saving of at least \$400.00 in coils and kept me from being dragged out of bed at night, an occurrence that often happened before. Then, too, we can replace burned out Fusetron fuses much faster than we can replace coils, to say nothing of the valuable production time we save."

## Facts about Fusetron dual-element Fuses

- The fuse link element opens on short-circuit — the thermal cutout element protects on overloads — the result, a fuse with tremendous time-lag and much less electrical resistance.

- They have the same degree of Underwriters' Laboratories approval for both motor-running and circuit protection as the most expensive devices made.

- Made to the same dimensions as ordinary fuses — fit all standard fuse holders.

- Obtainable in all sizes from 1/10 to 600 ampere, both 250 and 600 volt types. Also in plug types for 125 volt circuits.

- Their cost is surprisingly low.

**FUSETRON**

TRUSTWORTHY NAMES IN  
ELECTRICAL PROTECTION

**BUSS**

# "You too, can get 10 Point Protection by using Fusetron DUAL-ELEMENT Fuses"



- 1\* Protect against short-circuits.
- 2 Protect against needless blows caused by harmless overloads.
- 3 Protect against needless blows caused by excessive heating — lesser resistance results in much cooler operation.
- 4 Provide thermal protection — for panels and switches against damage from heating due to poor contact.
- 5 Protect motors against burnout from overloading.
- 6 Protect motors against burnout due to single phasing.
- 7 Give DOUBLE burnout protection to large motors — without extra cost.
- 8 Make protection of small motors simple and inexpensive.
- 9 Protect against waste of space and money — permit use of proper size switches and panels.
- 10 Protect coils, transformers and solenoids against burnout.



★ Fusetron Fuses have high interrupting capacity as shown by tests of Electrical Testing Laboratories of New York City in December 1947.

## Don't Risk Losses!

One **destroyed** switch or panel . . .  
One **needless** shutdown . . .  
One **lost** motor . . .

May cost you far more than replacing every ordinary fuse with a Fusetron dual-element Fuse.

**Mail the Coupon Now!**

Bussmann Mfg. Co., University at Jefferson  
St. Louis 7, Mo. (Division McGraw Electric Co.)

Please send me complete facts about FUSETRON dual-element Fuses.

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Title.....

Company.....

Address.....

City and Zone..... State..... 751

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Ever wonder how those neat pleats are put in a lady's skirt? It is done with a Riegel paper made from white manila rope. Two identical paper patterns are creased by hand. The cloth is then folded between them, and a steam-press finishes the job. The patterns can be used over and over again for many months, due to the exceptional strength of the rope fibres.

It's another interesting example of Riegel's ability to make paper for almost any need. We now produce more than 600 grades, and in spite of present conditions we are constantly developing even more new papers for companies who join us in planning for the future. Write us now for more information.



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Fine papers for almost every purpose—papers that add their persuasive influence to the printed word, beauty to packages and ruggedness for protection; these are West Virginia's products. The Ohio Injector Company considers it a compliment that OIC Valves share in their production.

OIC Valves are *precision engineered* and *precision built*, providing efficient control of flow of air, gases and liquids. And where plant designers and builders need assistance in selecting valves best suited to each use, OIC engineers offer *precision application* help.

Ask your local OIC distributor for a free copy of the OIC Valve Cross-Reference Chart. Or write direct to The Ohio Injector Company, Wadsworth, O.



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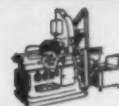
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*...a Name to Remember*

Some of the products we illustrate here are old stand-bys in your plant or shop. Others might also fit in to your advantage. For they are all made by different divisions of **ACCO**, the trade-mark and symbol of **American Chain & Cable**—manufacturer of many products essential to Industry, Agriculture, Transportation and the Home.

Making quality products is a creed with us. It is our policy to make each one of a wide variety "intentionally better." That's why we say "**ACCO . . . a Name to Remember.**"

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#### CASTINGS

Reading Electric Steel  
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Springs and Units for  
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#### "ROCKWELL" and TUKON HARDNESS TESTERS

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## FLEXIBILITY IS NEEDED

**P**URCHASING AGENTS at the N.A.P.A. Convention heard a lot about controls, both present and planned. The top men from NPA, CMP, OPS, and several of the commodity agencies were present to tell about them and to answer questions. For the most part, there was a genuine spirit of cooperation expressed by buyers, a recognition of the necessity for such programs and a desire to learn how best to live with them.

At the same time, there was much evidence presented by the representatives of government, the economists, and purchasing men themselves, that the predictions of only a few months ago as to business activity, supply and demand, had gone rather badly astray, and that new factors can quickly alter any given set of conditions.

There were paradoxes, too. While the talk was largely of shortages and allocation, manufacturers and distributors alike were reported living off over-large inventories and curtailing their forward commitments. While OPS is desperately trying to set and enforce maximum prices on some commodities, the convention city itself was the focal point of a price war, and court action has been started to maintain minimum prices under the "Fair Trade" laws.

Control is a very rigid word, and it reflects a very rigid philosophy. If the convention proceedings proved anything, it is that a sound system of control must be flexible enough to adapt itself to changing conditions and to the infinite variations of our complex industrial and trade economy.

One of the speakers on standardization warned against premature adoption of engineering standards that would tend to "freeze" technological progress, and stressed the importance of constant review and revision. A similar warning is appropriate on controls that tend to freeze economic and industrial development. Experience has shown that, whatever may be the difficulties encountered in imposing a system of controls, they are simple in comparison with getting the controls removed or modified when the conditions that prompted the controls have changed.

Let's work with necessary controls, and keep them under constant review. Let's adapt our controls to the American system, to avoid excesses and abuses. But let's not adapt the system to controls. That's what we are fighting against.

*Stuart F. Henrity*

# TODAY *in Chemicals and Plastics*

To assist Purchasing Agents with their daily problems is the main purpose of these monthly Monsanto messages. Here are several suggestions that may prove helpful —

A number of Monsanto chemicals — such as plasticizers and intermediates — are supplied in several grades, which are rated in terms of color stability. In some end products, color stability is very important — essential, in fact. In other products, this stability factor is of little consequence.

So, why not re-evaluate your needs — see if a chemical with less color stability will answer as well. You may find it more freely available.

As another suggestion, consider extenders — they make some scarce chemicals go further. One such extender is orhonitrobiphenyl, commonly called ONB. This is a low-cost plasticizer having a wide compatibility range and, therefore, useful in a number of cases where scarce plasticizers may not be as readily available. If you're interested in plasticizers, write Monsanto about ONB.

Many new Monsanto products are awaiting use. A wide variety of Monsanto intermediates is available in limited or full-scale commercial quantities. Anyone interested in possible applications of intermediates is invited to write for details.

Users of alcohol in the New England area should get in touch with Monsanto, Boston, about their present and future supplies, even though there is no shortage now.

Compounders of lubricating greases are showing considerable interest in a new application of Monsanto's Santocel\*. The ARD grade of this free-flowing aerogel possesses an extremely high absorption power — is particularly effective as a thickening agent for nonpolar liquids. Information on request.

Papermakers with an eye to efficiency and low sizing costs are turning to Mersize\* RM, Monsanto's new balanced paper size. Cuts material handling costs 50% — does away with guessing, prolonged dissolving. Since Mersize RM is a chemically correct mixture of rosin and Mersize CD-2, no weighing of separate ingredients is necessary.

Return of empties is still a problem. Because it expedites shipments of most classes of chemical materials, buyers are urged to send empties "back home" as soon as possible. This goes for tank cars, carboys, returnable drums.

Formulators of cleaning compounds will be particularly interested in Monsanto's Santomer\* 80. It is a new and highly active detergent and wetting agent.

Users of phthalic and drying oils supplies see an encouraging note in the availability of maleic anhydride. Output of maleic has risen with Monsanto's increased output of phthalic . . .  
MONSANTO CHEMICAL COMPANY, 1700 South Second Street, St. Louis 4, Missouri.

\*Reg. U. S. Pat. Off.



SERVING INDUSTRY...WHICH SERVES MANKIND

# Highlights

This issue's important features summarized for the busy reader



The lasting impressions, and many of the lasting benefits, of any convention are informal and pictorial—the impact of the crowd drawn together by one common interest and common purpose, the first-hand views of personalities important in the news and in national policies, the reunion meetings with old friends, the colorful variety of the product exhibits, the intimate discussions that follow the formal meetings. In covering the **N.A.P.A. Convention of 1951**, our photographers and editors have tried to catch the flavor of that meeting, presenting it in a sixteen-page section of views and abstracts, starting on page 75. If you were present at the convention, we believe that these pages will help you to re-live that experience and will provide a lasting reminder of the high spots of this memorable gathering. If you were unable to be at the Waldorf during these busy and important days, the convention section is the next best way of sharing in the meeting.

Among the important addresses at the convention, practical and keyed to the purchasing problems of the day, were the keynote address by **President "Hack" Jones**, outlining a four-point program for purchasing men under present conditions (reported on page 91), and the ever popular commentary "From One P.A. to Another" as presented by **Executive Secretary George Renard** (reported on page 72). Turn to these timely articles for authoritative guidance on progressive, constructive purchasing thought in these critical days.

Economist A. W. Zelomek told the convention about the dramatic changes that have taken place in the textile industry over the past two decades—the **Battle of the Fibres**. He traced the tremendous developments that have taken place in synthetic, man-made fibres, which are displacing the conventional natural fibres on the competitive basis of cost and availability, but even more on their advantages of specific properties and adaptability. For a report on what this development means to the textile industry and to users of textile products, turn to page 97.



For a reasoned analysis of the supply and demand situation on **Strategic Materials**, including the impact of the defense mobilization program and probable adjustments as the national economy gets back to a working balance for maintaining the "arsenal economy" that seems inevitable in a troubled and fiercely competitive world, turn to Col. Chevalier's address on page 94. A series of charts on key materials will help you to visualize the current situation and outlook.

**Leadership in Purchasing** is exemplified in the presentation of the newly elected President and Executive Committee of the National Association of Purchasing Agents (pages 69 and 70) and the Convention Program Chairman (cover photo and page 71). Get acquainted with the men who are ably handling these important responsibilities on behalf of your profession.

Corollary to the problems of supply and production for the combined military and civilian program, is a pressing need to step up the supplies of **Iron and Steel Scrap** through an active, organized program of assembling all available scrap material and returning it promptly to the channels of steel production. The situation is reviewed on page 107. It is a particularly pertinent story for purchasing agents, who are typically in charge of scrap disposal for their companies. Here is a chance to help yourself at the same time that you are helping the nation meet a vital problem.

In the biographical sketch of President-elect C. F. Ogden of N.A.P.A., mention is made of his generous and effective service as a speaker at gatherings of purchasing men. A specific example of this is his recent appearance at the annual meeting of the National Association of Educational Buyers in Detroit. Mr. Ogden's topic at that meeting was a searching and stimulating self-analysis of the purchasing agent and his job—**A Look in the Mirror**. You'll find it reported on page 111. For further reports on the NAEB meeting turn to the convention summary on page 108 and James Dunleavy's paper on **Forms Control**, page 113.



The **Where We Stand** section (page 99) brings you the current monthly summary of economic and business trends, including key indicators and the commodity comment of experts as presented at the N.A.P.A. group sessions, as well as delivery information on selected products.

**Business Law** is made by court interpretations. Some of the significant decisions in recent litigation are reported in Leo Parker's article on page 118.

Are you making full use of these monthly departmental features compiled especially for the purchasing agent? The **Washington Previews** (page 13) keep you informed on current developments in governmental policy. Another section is devoted to **Office Equipment and Forms** (page 173). Informative **Trade Bulletins and Catalogs** listed on page 19 are yours for the asking. **New Products and Ideas** are also reported (page 128).



# Tons of Steel But No Sizes

Paradoxical though it sounds, this sums up the steel situation here at Ryerson rather accurately. At least that's the way it seems when we try to fill many orders. Because the bread-and-butter sizes, the ones everybody needs most often, are practically impossible to keep on hand—even though we do have tons of steel.

We would certainly give anything to be able to fill every order. Sometimes it seems there's little we can do except keep on trying; however, we continue to pass on to you suggestions which some of our good friends have found helpful:

Be sure to extend DO ratings when they apply; so—providing we have the stock—your order will have preference.

If you can use alternate kinds or sizes let us know. It will increase our chances of filling your order. Also give us your minimum acceptable length as we might even be able to make delivery from "shorts."

And finally—send in a list of your requirements or keep calling us at frequent intervals because what is out of stock today may be on hand tomorrow. You can be sure we'll continue, as always, to do our level best to help you.

PARTIAL LIST OF PRODUCTS—BARS • STRUCTURALS • PLATES  
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## Ogden Heads N.A.P.A.



Chet Ogden (right) takes over the reins of office from retiring president Hack Jones

Chester F. Ogden, Purchasing Agent of The Detroit Edison Company, has been elected President of the National Association of Purchasing Agents for 1951-1952. He took office at the 36th Annual International Convention of the Association, at The Waldorf-Astoria, New York, succeeding Harold F. Jones of E. I. du Pont de Nemours & Company, Wilmington, Delaware.

Mr. Ogden is a graduate of the University of Michigan, in Mechanical Engineering and Business Administration. He joined the purchasing department of The Detroit Edison Company in 1934 and has headed the department since 1946. He served as Chairman of the Pub-

lic Utility Buyers' Group, N.A.P.A., in 1949-1950, and has been a member of the National Executive Committee for the past year as Vice President for District No. 4. In addition to his leadership in the Utility group, he is widely known throughout the purchasing field as an authority on departmental training methods, and has given generously of his time as a speaker at national, district and local meetings. He is also Vice Chairman of the Purchasing and Stores Committee, Edison Electrical Institute, and a member of the Board of Control, Detroit Board of Commerce.

During World War II, Mr. Ogden was a consultant to the Office of War Utilities, WPB, and Ad-

ministrator of Utilities Order U-9, the "brownout" order. In the present emergency he has again been called upon as consultant to the Defense Electric Power Administration, Department of Interior.

He is a member of the Engineering Society of Detroit, The Electrical Association of Detroit, Army Ordnance Association, and the Detroit Athletic Club. Among his many civic interests and activities are service on the Board of Directors, Goodwill Industries of Detroit, and a three-year term as Chairman of Detroit District 4, Boy Scouts of America. He has two sons, David James and John Hall, aged 14 and 10, and a daughter Jill, aged 7.



Standing (l. to r.): Brown, Carlisle, Sprung, Mogle, Paulsen, Fagan.  
Seated (l. to r.): Porter, Jones, Ogden, Wilson, Christensen.

### New Officers

## Executive Committee—1951-1952

### National Association of Purchasing Agents

**President:** C. F. Ogden, The Detroit Edison Company, Detroit, Michigan.

**Immediate Past President:** H. F. Jones, E. I. du Pont de Nemours & Company, Wilmington, Delaware.

**Vice President, District 1:** H. W. Christensen, Columbia Steel Company, San Francisco, California.

British Columbia, Hawaii, Los Angeles, Northern California, Oregon, Utah, and Washington Associations.

**Vice President, District 2:** Charles F. Wilson, Lone Star Gas Company, Dallas, Texas.

Dallas, Fort Worth, Houston, Oklahoma City, Shreveport, Tampico, Texas Panhandle, Tulsa, and Wichita Associations.

**Vice President, District 3:** T. S. Paulsen, Russell Miller Milling Company, Minneapolis, Minnesota.

Central Iowa, Chicago, Denver, Kansas City, Milwaukee, Rock River Valley, St. Louis, Tri-City, Twin City, and Twin Ports Associations.

**Vice President, District 4:** James A. Mogle, National Standard Company, Niles, Michigan.

Central Michigan, Detroit, Eastern Indiana, Fort Wayne, Grand Rapids, Indianapolis, Kalamazoo, Saginaw Valley, South Bend, and Western Michigan Associations.

**Vice President, District 5:** B. Knox Sprung, Manitoba Power Commission, Winnipeg, Manitoba, Canada.

Calgary, Central Ontario, Edmonton, Essex-Kent, Hamilton, Montreal, Niagara District, Toronto, Western Ontario, and Winnipeg Associations.

**Vice President, District 6:** Maurice E. Carlisle, Pittsburgh Plate Glass Company, Pittsburgh, Pennsylvania.

Akron, Canton, Cincinnati, Cleveland, Columbus, Dayton, Erie, New Castle, North Central Ohio, Northwestern Pennsylvania, Pittsburgh, Springfield, Toledo, Tri-State, and Youngstown District Associations.

**Vice President, District 7:** Clyde H. Porter, Alabama By-Products Corporation, Birmingham, Alabama.

Alabama, Chattanooga, East Tennessee, Florida, Georgia, Louisville, Memphis, Mississippi, and New Orleans Associations.

**Vice President, District 8:** George L. Brown, F. C. Huyck & Sons, Kenwood Mills, Rensselaer, New York.

Baltimore, Buffalo, Carolinas-Virginia, Eastern New York, Elmira, Lehigh Valley, New York, Philadelphia, Reading, Rochester, Syracuse, Washington (D. C.), and Wilmington Associations.

**Vice President, District 9:** Laurence A. Fagan, Connecticut State Department of Health, Hartford, Connecticut.

Connecticut, New England, Rhode Island, and Western Massachusetts Associations.

## The Man Behind the Program



**T**HE consistent success of N.A.-P. A. conventions over the years has been built upon the sound principle that the program makes the convention. Annually, the selection and appointment of the general program chairman is a matter of most careful consideration, for it represents one of the most important assignments of responsibility in the entire range of Association activities.

The program of the 36th annual convention was of outstanding calibre. It presented a balanced consideration of basic purchasing policy and the pressing problems of the immediate situation. It placed before the membership the complementary viewpoints of government spokesmen, professional economists, commodity specialists, and practical purchasing men. At the general sessions it introduced the top personalities responsible for national production and price controls. In varied group sessions, it afforded the opportunity for intimate personal discussion of specific markets and industries. Throughout, it demonstrated the high quality of far-

sighted leadership within the ranks of purchasing men and women that explains and guarantees continuing progress in the purchasing field.

The man behind the program for the 1951 convention was Stanley W. MacKenzie, Director of Purchases, United States Rubber Company, New York.

Mr. MacKenzie's early plan for his life work was a far cry from industrial purchasing. He entered Michigan State College with the class of 1918, studying horticulture with the idea of becoming a plant pathologist. World War I interrupted that plan. He left college toward the end of his Junior year, in 1917, to enter the Officers Training Corps at Fort Sheridan, Illinois, where he was commissioned a lieutenant in the Infantry.

Returning to civilian life in 1920, he got a job with the Footwear Division of United States Rubber Company, and was assigned to the office of the General Manager. Subsequently, he was transferred to the Mechanical Goods Division, and got his introduction to purchasing work when he was appointed Purchasing Agent at the Passaic,

N. J., plant in 1929. This was a stepping stone to the position of Division Purchasing Agent of the Mechanical Goods Division. In 1941, he was brought into the General Purchasing Department as Assistant to the Director of Purchases, and became Director of Purchases in May, 1944.

He has been an active member of the Purchasing Agents Association of New York, serving on the Executive Committee and as chairman of the local Education Committee. On the National Committee on Education, N.A.P.A., he has headed the Development Committee on Intracompany Activities. During his term in that office, the committee issued two important studies that have been of outstanding value and have found wide acceptance among purchasing men: "Outline of an Intracompany Training Program for Purchasing Personnel" and "Improving Purchasing Department Reports to Management."

In his home community, the Village of Briarcliff Manor, N. Y., he is chairman of the Planning Board and serves as a vestryman of All Saints Episcopal Church.



## From One P. A. to Another

**By George A. Renard**  
Executive Secretary, N.A.P.A.

N.A.P.A. Convention address.

**I**T is hardly necessary to remind you that these are difficult times, or that the past ten years have been the most difficult in our business history, and particularly so for purchasing executives.

I do wish to remind you, however, that, in those ten years, purchasing has responded to the challenge, by accepting the additional work burdens, and the increased responsibility, as an opportunity to become a full partner in the top levels of management.

*May your opportunities never grow less.*

These developments have been anticipated and appreciated by the leaders of purchasing in the National Association of Purchasing Agents, and have been reflected in the policies and activities of the Association. No organization, either trade or professional, has more able or sincere leadership.

*May the calibre of our leadership never grow less.*

No member of this Association is ever embarrassed by a policy or activity of the N.A.P.A., or needs to apologize for its objectives, procedures or program. So, we can, and do, have the active leadership and membership of the most representative members of the profession. That is as it should be, and should continue to be, regardless of booms, recessions, emergencies or regulations. It is the heritage of many years and many able leaders.

Purchasing publications and com-

modity information services have advanced their standards and standing. No professional group is better served in this very essential respect.

All of which accounts for the acceptance of purchasing, and the Association as its representative, by government, management, educational and other business and professional organizations.

*May your appreciation of those facts, and factors never grow less.* They are a challenge — and a responsibility — for everyone in purchasing.

### **At the National Level**

A month ago, the British Government created a Ministry of Materials, to give procurement problems the highest Cabinet rank. The department is expected to handle all questions relating to procurement of domestic and imported materials, and to remove those policies from the part-time consideration of political, diplomatic and allocation influences among the other agencies of the Government.

The results of U. S. A. procurement of wool, rubber, tin and other materials for stock-piling purposes has certainly been a lesson in "how not to do it" and there is plenty of room for improvement in our methods, influences and program. Surely the procurement of billions of dollars worth of raw and industrial materials should not be a part-time consideration of military and diplo-

matic agencies having no particular qualifications in this specialized field of management.

The United States Government is moving toward recognition of the importance of procurement in the civilian agencies, and only one month ago, President Truman demanded that the military services "buy wisely, buy only what they need, and put what they buy to good use." If that is not done, we will spend hundreds of millions of dollars again, for materials to be sold for a fraction of the cost, as surplus.

Secretary of Defense Marshall is reported to be insisting "for the first time in our military history" that regular procurement reports be made by the three services. These reports are to cover stocks on hand and on order, with delivery, consumption and requirement schedules.

These practical steps by President Truman and Secretary Marshall are highly commendable and are probably being urged by Defense Mobilization Director Wilson. They are not new ideas, however, because Senator Truman and Donald Nelson wanted General Marshall to adopt these same sound business policies ten years ago. If it is not done now, the dollar, material, and manpower wastes will be terrific; the inflationary effects on prices will be compounded, and the reduction of supplies for civilian use will be unnecessarily severe.

Sound military procurement policies could be made more effective now by simply checking and double-checking all of the emergency operations of the past year; every authorization for the purchase of machinery or equipment, in a contract, should be on record and should be checked to see if facilities are elsewhere available for that production.

We have a serious financial stake in these procurement operations, as well as a patriotic duty to help correct them.

Business, too, has a responsibility to correct some of the tragic blunders of these inexperienced contracting officers. If one of your assistants ordered 10,000,000 dozen oyster forks or 6,000,000 gallons of paint for prompt delivery, you would expect a reasonable, responsible supplier to call it to your attention and have the quantity corrected. If he didn't, you wouldn't give him any more business.

If the services "for the first time in military history" get inventory records and give regular procurement reports, these things may clear up; there will be much less overbuying, and we will not have such severe material shortages which end up in excessive surplus disposal sales.

Perhaps England has something; maybe we need a Secretary of Procurement to deal with our own services and agencies, and to furnish sound purchasing judgment in these billion dollar deals in aid for Allies.

Perhaps even more important, the recognition of the major importance of procurement would



EXTRA-CURRICULAR DISCUSSION. Nels Gibbins, Lansing; George Aljian, San Francisco; Carl Roberts, Denver; Philip Arnold, Carmel, Cal.; H. W. Christensen, San Francisco.

focus attention on the fact that qualified people are more essential than systems, directives or legislation. Army Engineers asked me, last month, to help them secure a number of lumber buyers, to be located at several points in the South, and be paid \$4,200 a year. So, you can easily see that our previous experience with wasted funds, surplus materials and unqualified purchasing staffs have not taught us a lesson. A good bricklayer gets more than \$4,200 a year, and probably knows more about lumber than the several men they will hire, to compete with each other, and bull the markets.

Our military services examined 170,000 college students ten days ago, gave them an aptitude test, and those who flunk must serve in the Army; \$4,200 lumber buyers

would probably flunk an aptitude test too, and one well qualified lumber buyer would probably save millions of dollars. That is a basic fundamental which we should strongly support, for patriotic and financial reasons, entirely aside from any professional interest.

So, our responsibility for having qualified people handle government procurement will not grow less until the situation is corrected. It extends to all levels of government.

### Stockpiles and Shortages

Three months ago, toward the end of March, a survey of purchasing opinion by our Business Survey Committee casually mentioned that a duplication of the inventory recession of 1949 was very possible, as the comparable conditions were quite similar in many respects.

Any present shortages are created almost entirely by defense production, expansion of plants, allied assistance programs and stockpiling — all of which are in the final analysis — scare buying by the Government.

We have often been told that expansion of production is the only effective means of stabilizing prices, yet industrial price averages advanced point for point with that rapid expansion of production in 1950.

The increase of steel production capacity in 1951 and 1952 will be the greatest in our history, and five times the normal growth. We produced 64,000,000 tons of finished steel in 1944, the peak war year; went well beyond that in 1950 and by the end of 1952 should be producing about 1/3 more than at the war peak.



NEW ENGLAND BUYERS patronize Coca-Cola booth: George D. Seguin, Norton Co.; Louis A. Little, Simonds Saw & Steel Co.; Gordon A. Reitan, Heywood-Wakefield Co.



**HIS TURN TO RELAX.** W. E. "Chic" Cummin, who did yeoman service as Convention Chairman at previous New York meetings, has a chance to enjoy this one.

Where did that increase of 14,000,000 tons of steel go in 1950? Breaking it down to the consumer scare buying level we find that about 25% of the 1950 steel production went into all-time record sales of houses, autos, refrigerators, cooking, washing and cleaning machines and other so-called consumer durable goods.

The production of those items was super-colossal in 1950 and has continued at those high rates right up to now. It is very doubtful if it could continue even if materials were running out of our ears, because it couldn't be sold. One auto plant is closed.

It is also doubtful if any curtailment now contemplated, because of defense production, will create difficult shortages, if our economic planners turn off the scares. Any production now being curtailed is in durable goods, and if they are durable they will last over this brief period when their production is at a normal rate instead of at the scare buying production record rates of 1950 and 1951.

Allowing a 35% cut under 1950 production of houses, autos, refrigerators, washing machines, television and radio, we still have about what was produced in 1949, a very good year. It would seem that aside from war, the only real shortages we need fear, are those we are scared into by anticipatory buying.

We can have approximately the 1949 prescare civilian production,

and if one-half of the people that have 1950 and 1951 model autos, refrigerators and radios find them durable enough to run through 1953, there can hardly be enough of a shortage to create black market price troubles.

The smart operators who cash in on extras, premiums and scared customers, with no sales effort, have been banking on civilian goods curtailment being a blackout. As a matter of fact it should be a partial, and only temporary, eclipse.

Perhaps Bob Swanton and the Business Survey Committee uncovered a hornet's nest of inventory trouble by that comment last March. Uncle Sam has stock-piled in fear of Russia; manufacturers and distributors have stock-piled in fear of Uncle Sam; consumers laid it in through fear of distribution rationing.

To paraphrase an old Southern song, "All God's Children Got Stock Piles," and all the experts are seeing it now.

### International Affairs

The international situation is the prize enigma of our generation. Old soldiers may fade away, or get canned, but General Ike is opening a new operation that will consume materials and man power. Of course, he won't lower the standards of high living that have been established by our military leaders in Japan, Germany, Greece, Turkey, Italy and Austria. Think what

might happen if we should defeat China and Russia, and have to support, rehabilitate, reconstruct, unionize and otherwise welfare their underprivileged hordes. That *would* break the bank.

The Department of State seems to determine largely military policies abroad, as well as economic programs abroad; and between the two, that just about gives those boys control of economic conditions at home. I cannot, offhand, think of *any* experienced business people connected with the Department of State, which holds such a powerful influence over our business and economic life.

Another equally influential, equally progressive thinking, and equally large economic staff with no business experience, is found in the Council of Economic Advisers to the President. It is fair to say both of these groups think economic plans should serve political purposes.

Congress, through investigations and threats to curtail appropriations, has compelled changes in some of our procurement, stockpiling and give-away programs. Indirect aid for our enemies, through our friends, is being cut off; foolish procurement programs abroad that put our costs over the moon have been halted, and prices of those commodities promptly dropped; perhaps some double check will even be extended to the defense production expansion program which, peculiarly, is almost identical with former economic expansion theories of the most liberal of our economic experts.

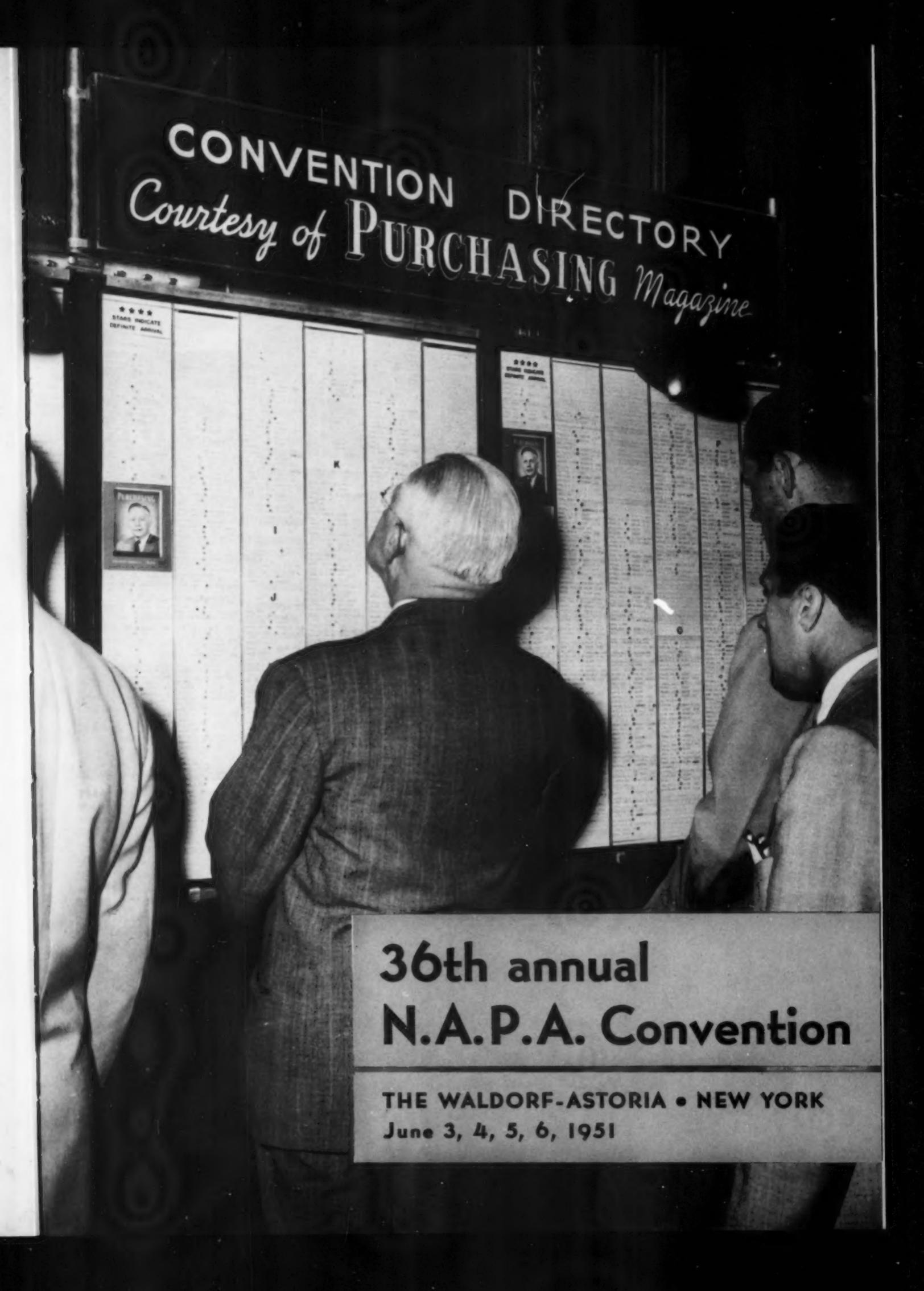
Expansion for welfare purposes at home; expansion of aid to other nations; expansion for defense — all types of expansion that create inflation — and many of us think inflation is our greatest enemy.

If that is true, we may find, in the words of a prominent military spokesman, that we are fighting the wrong war, in the wrong place, in the wrong way and at the wrong time.

Hitler told us in his book, *Mein Kampf*, exactly what he planned to do — and did. We were too smart to fall for his tip.

Lenin and Stalin have both told the world that inflation and corruption are their secret weapons for defeating these generous, high-living, democratic peoples. Perhaps we are too crafty and enlightened to take that warning.

Two recent legal decisions by the  
(Please turn to page 286)



CONVENTION DIRECTORY  
*Courtesy of* PURCHASING Magazine

**36th annual  
N.A.P.A. Convention**

**THE WALDORF-ASTORIA • NEW YORK  
June 3, 4, 5, 6, 1951**



**THE CONVENTION LOBBY** of the Waldorf was crowded on Monday morning as N.A.P.A. sessions got under way.



**REGISTRATIONS** went over the 2,900 mark, a new all-time high for N.A.P.A. convention attendance and taxing the capacity of the meeting rooms.



**SORRY!** No more tickets for the Early Birds Dinner or the Banquet. These popular events were a sell-out weeks before the convention opened.

**GEORGE TURADIAN'S** Inform-A-Show Service desk was a busy spot and helped keep the show running smoothly and on schedule.



**NEW YORK's** Mayor Vincent Impellitteri, arriving to welcome the visiting delegates, is welcomed at the hotel by his own City Purchasing Agent, A. L. McMillan.



**IRONING OUT** some last minute details of the Educational Committee program are Ivor Hughes of Chicago and Don Lyons of the New York Association.



**CONSULTING** program to plan the day's schedule is Harold A. Neff of Holo-Krome Screw Corp., Hartford, Conn.



**REUNION** at the Waldorf. Past president Al Hayes, New York, with former associates in the New England Association, Secretary Harry Graham and Dick Kimball of Foxboro, Co.



**PLEASANTLY ANTICIPATING** the mystic rites of the Hendricks Club are Squire Lee Clayton, Cincinnati, and Squire "Red" Smith, Wabash, Ind.



**RELAXING.** Executive Secretaries Jep Leonard, New York Association, Ed Chambers, Northern California, and George Renard, N.A.P.A.

**WASHINGTON, D. C., DELEGATION** promptly set up Association headquarters at the Waldorf to greet all comers.

**ROCKWELL MFG. CO.** purchasing men get together: M. L. Furrey, Bellefontaine; W. H. Newbaker and C. W. McVicar, Pittsburgh; J. O. Russell, Freeport; and Gilbert Scully, Milwaukee.





**ECONOMIST MARTIN GAINSBROUGH** addressed the opening session of the convention — predicted a moderate upward trend in total business activity over the balance of the year — foresaw no acute consumer shortages in 1951 — warned against increasingly inflationary impact of the defense program — cited manpower problems as the most understressed factor in the present situation — called attention to the paradox that price rollbacks will widen the inflationary gap by increasing the excess of income over supply.



**CONVENTION CHAIRMAN HOWARD AHL** called N.A.P.A.'s biggest conference to order promptly on Monday morning.



**MAYOR VINCENT IMPELLITTERI** of New York City appeared in person to welcome the nation's buyers.



**CHAIRMAN BOB SWANTON** of the Business Survey Committee reported an unhealthy condition of burdensome and unbalanced inventories, false demand, ineffective defense orders, a shortening of purchase commitments, and unpredictable material allotments. Even guaranteed price protection has failed to encourage a longer view of the markets. He asked: "Why is it necessary to put our free enterprise system in moth balls to insure such a small part of our gross national producing capacity for defense?"



**NPA ADMIN-  
STRATOR MANLY  
FLEISCHMANN** re-  
ported that the CMP  
program is "on  
time", since quanti-  
tative judgments on  
essential require-  
ments had first to be  
developed and de-  
termined.



**INTERNATIONAL  
REPORTER GEORGE  
SOKOLSKY** finds  
that American for-  
eign policy and pro-  
grams of economic  
assistance are fail-  
ing to make friends  
for us among the na-  
tions of the world.



**COL. WILLARD  
CHEVALIER** finds  
that our national re-  
sources are ample to  
support the "arsenal  
economy" toward  
which we are head-  
ing; the period of  
transition will be the  
most difficult.



**STEEL EXECUTIVE  
ERNEST WEIR** de-  
clared that industry's  
problems are prima-  
rily a reflection of  
"politics first" in na-  
tional affairs, criti-  
cized short-sighted  
leadership of both  
parties.



**COAL EXECUTIVE  
GEORGE H. LOVE**  
stressed the eco-  
nomic importance of  
maintaining excess  
producing capacity  
in bituminous coal,  
presented a five-  
point program to  
achieve this end.



**GENERAL DONALD  
ARMSTRONG** called  
standardization a  
vital factor in a dy-  
namic economic sys-  
tem, whether for  
peace or war;  
warned against pre-  
mature standards  
that freeze further  
development.



The United States Steel Company booth shared with Western Brass Mills the Inform-a-Show award for most informative and attractive exhibit.

## The Inform-a-Show Exhibits Provided Product Information . . .



Associated Spring Corporation's fluorescent display proved to be one of the "stoppers" of the show.



P. A. Norvell Slay of the Key Company, East St. Louis, gets some pointers on valves at the Lunkenheimer booth.



E. D. Wolf of C-O-Two Company and N. K. Keller of Central Ohio Shell Company look over the Cleveland Cap Screw Company exhibit.



Eberhard Faber's pencil display caught the attention of R. M. Burns (P. R. Mallory & Co.) and Robert L. Foster (Sorg Paper Co.)



Everybody wins at Sylvania's "Beat the Clock" game.



Portraiture against a backdrop of General Electric lamps.

## ..... and Diversion



Hopeful guesstimator registers his entry for Western Brass Mills prize of a Winchester rifle.



"The face is familiar". John Berry of Indianapolis inspects the rapid-fire sketch produced by the Chase Brass artist.



"The Pause that Refreshes", patronized by loyal Atlantans.



Drilling for oil at the Shell booth.



Shopping for souvenirs. The ladies made quite a haul.

## Down-to-Earth Group Sessions



**PAPER FORUM.** Horace Duckenfield, Lee Weber, Stuart Edgerton, A. R. Smith, Jr., Ralph Betts, T. A. Corcoran, Frank Stevenson.



◀ **BURL S. WATSON**, Vice President, Cities Service Oil Co., told the Fuels Forum that the petroleum industry is prepared to meet total industrial and civilian demands as well as stepped-up military requirements. He asked the cooperation of all fuel oil users in filling their tanks during the summer off-season and making maximum use of existing storage facilities to lessen the winter strain on both transportation and storage.

**A. W. ZELOMEK**, economist, addressed the Textiles Forum, ▶ tracing the tremendous development in man-made fibres that are revolutionizing the product and the whole economic structure of the textile industries. "We are entering a textile economy in which the variety of fabrics will be almost unbelievable. It will be possible to decide on the exact properties that a finished garment should have, and then create the fabric from which it can be made by mixing and blending the synthetic and natural fibres."



**NON-FERROUS METALS PANEL** considered impending shortages in this important field. Paul B. Andrews of the Copper Division, National Production Authority, is the

speaker. Others shown in this photograph are: H. A. Berry, Kalamazoo; J. J. Sharkey, St. Louis; H. R. Michael, Pittsburgh and Washington; A. C. Bull and W. B. Burnett, Chicago.

## were Well Attended

**FRANK A. WATTS**, Director of Materials, Petroleum Administration for Defense, addressed a crowded session of the Oil Company Buyers Group, explaining the new petroleum regulations. At the speaker's left are Haylett O'Neill of Humble Oil & Refining Co., and James B. Thompson of Shell Pipe Line Corp., Group Chairman.



**KENNETH E. YOUNGCHILD**, American Cyanamid Co., told the Pulp and Paper Manufacturers Group about new developments in papermaking chemicals. At the speaker's left are Earle Weaver and A. B. Copping, International Paper Co., and Hans Lagerlof, American Pulp & Paper Co.

**LEE FORKER** of Quaker State Oil Refining Corp., Chairman of the N.A.P.A. Committee on Containers, leads a discussion on the outlook for container supplies. Shown with him on the panel are P. J. Martersteck, Jos. E. Seagram & Sons; J. M. Berry, Vick Chemical Co.; and E. E. Rumble, Merck & Co.





**Dr. Robert N. McMurry** was the commentator for the Educational Committee's smash-hit program proving that two heads are better than one.



#### George Henry Receives Editorial Award

In a surprise feature of the educational session, Hal Darrow of *Industrial Marketing* presented the Award of Merit for Editorial Achievement to George E. Henry, Associate Editor of *PURCHASING* Magazine, in recognition of the "Purchase for Profit" issue, selected from among 584 entries representing the business press of the entire country.



Over the Transom



Licking the Problem

The Cast Takes a Bow



### Educational Committee Program Demonstrates Role-Playing Technique in Purchasing Skit

Each year, conventioners look forward to the session sponsored by the unpredictable but always original and effective Committee on Education. This year's presentation consisted of a graphic slide lecture on the theme of using the collective knowledge and experience of the group to solve individual problems in purchasing, supplemented by three dramatic sketches illustrating how this can be achieved.

Central character was the non-self-starting P. A. of the Widget Appliance Company, who learned "over the transom", while waiting for a conference with the Big Boss, that he was on the verge of losing his job for his inability to get additional cartons, and that management had a pretty low regard for his ability in general.

In succeeding scenes, he took his troubles to a group of fellow purchasing agents, who invoked the "role-playing" technique of acting out the problem to develop (1) various methods of attacking the carton problem, and (2) how to let management know what purchasing actually accomplished.

The actors, who also developed the script in collaboration with Dr. McMurry and his consulting organization, were members of the Chicago Association. They included: Miss Catherine Keane, Messrs. Robert Doyle, Conrad Dreiske, Len Ansley, William Jackson, Ira B. Cross, Jr., Henry Kopp, Arthur Pearson, Ivor Hughes, Harold Berry, Earl Bolen, and two sepulchral voices.

## Cosgrove Receives Shipman Medal

The J. Shipman Gold Medal, annually awarded "to one who by precept, example, or distinguished service, has contributed to the advancement of purchasing", was presented at the banquet session to Harold M. Cosgrove, Executive Secretary of the Purchasing Agents Association of Tulsa and editor of the *Mid-Continent Purchaser*.

Mr. Cosgrove answered the call of the West in 1918, after 10 years as a newspaper man in Pennsylvania. He became purchasing agent for the Markham Oil Company in Tulsa, was active in Association work and served the Tulsa group as president in 1921-1922. Since 1926, he has devoted all of his time to the Association as its Executive Secretary, and was honored earlier this year with a special appreciation night marking 25 years in that office. He was one of the founders of the Association Editors' Group and was its first chairman. He is also a director of the International Petroleum Exhibition.

The presentation was made by F. J. Heaslip of Chicago, chairman of this year's Shipman Award Committee.



### Shipman Medalists Luncheon

From left to right: Julian G. Davies (1949), E. B. Hendricks (1943), Stuart F. Heinritz (1945), T. W. Harris, Jr. (1938), Roy C. Haberkern (1947), Frederick J. Heaslip (1939), F. Albert Hayes (1948). The group has undertaken the preparation of a history of the National Association.



### Happy "Braves" Await Initiation into the Hendricks Club

Members of the retiring Executive Committee of N.A.P.A., now "fallen columns" and pledged "not to take myself too damn seriously": Chet Ogden, Herb Gaston, Bill Murray, Stan Ringheim, Sam Harper, Bruce Henderson, Matt Shields, and Ollie Williamson.



**PRICE ADMINISTRATOR MICHAEL V. DISALLE** expressed emphatic confidence in the effectiveness of the price control program; cited indexes of raw material, wholesale, and consumer prices to prove that "the brakes have really taken hold" to check advancing prices. He urged a balanced program. Indirect controls — governmental economy, credit curbs, increased taxation — have their limitations, and must be supplemented with similarly limited direct controls to prevent price excesses and economic disaster. "We can, and we will, demonstrate the strength of character, the determination and the self-discipline to live temporarily with controls that we may live permanently with freedom."



**OPS COUNSEL HAROLD LEVENTHAL** expressed the hope that purchasing agents would constitute themselves an effective enforcement agency for the price control program. He stressed the need to keep constantly in mind both the long and short term influences on price determination, and commended N.A.P.A.'s own monthly Business Survey Report as a reliable and authoritative source of practical economic information to guide purchasing policies and decisions.



**WALTER C. SKUCE**, Assistant Administrator for Production Controls, NPA, explained the "open end" type of CMP control set up to meet present conditions. "NPA recognized early that the plan would have to be different in some respects from the plan we used in the last war. Because of the dual economy in which we find ourselves, and with the stated objective to get the military job done as well as to carry on an important level of consumer durable goods production, groups having authorized production schedules under CMP are restricted from sharing in the 'free' supply balance of materials to meet the unrated demands of producers without a CMP authorization."



**ECONOMIST EDWIN B. GEORGE** spoke on the impact of production controls. "A hard core of defense by 1953 will remain our goal whatever the shifts in Soviet political strategy short of genuine international disarmament. In comparison with the stakes, our rearmament program is a modest one. Our hopes and fears for peace are much too volatile for our production plans to follow closely without damage to both civilian and military output. We cannot compete with totalitarian governments in swiftness of action, political or martial. It is much easier for such people to shift their merely political tactics than it is for us to keep swinging our vast economy around to accommodate each new political phase."

# The Inform-a-Show was a Popular Meeting Place



The Jenkins Bros. valve exhibit attracted the interest and attention of many purchasing men throughout the convention period.



Cities Service lubrication products proved interesting to P. A. Maynard Robertson of the Briggs-Weaver Machinery Co., Dallas.



Past President Ralph Keefer stops in at his own company's booth on unofficial business. At left, P. A. Robert Thompson of Owens-Libbey-Owens Gas Department, Charleston, W. Va.



The Gaylord Container Corp. exhibit was a convenient stopping place at the entrance to the convention meeting room.



P.A.s Paul Crary, Cincinnati, and R. G. Haley, Toledo, get first hand information on non-ferrous products at the Federated Metals Division display.



Lee Forker, P. A. for the Quaker State Oil Refining Corp., chats with Garlock Packing Company's President G. L. Abbott.



**WOMEN IN PURCHASING.** Tuesday's luncheon meeting gave impressive evidence of the growing importance of this active professional group.

**AMONG THOSE PRESENT:** Anne Repko, Austenal Labs, who discussed "Purchasing Under Government Regulations"; Christine Caprio, Orange Screen Co., who presided at the luncheon; Rhoda Stewart, Marbon Corp., who spoke on "Best Foot Forward"; Elsie Gruber, Bigelow-Sanford Carpet Co., who served on the convention committee as Chairman of Women's Activities.



**NEW REGISTRANTS** continued to arrive for the second and third days' meetings.



◀ **PITTSBURGH's** Ralph Keefer and Bruce Henderson talk things over at the **PURCHASING** booth during a lull in the convention program.

**CONNECTICUT** delegation honored its new National Committeeman, Larry Fagan (center) with a reception preceding the banquet.



**PRESIDENT-ELECT** Chet Ogden (center) with members of the Public Utility Group: Charles Wilson and Fred Bradley, Dallas; Robert V. Stephens, Tulsa; and J. Donald Hogg, Cleveland.





**MIXED REACTIONS** to one of the spokesmen from Washington — thoughtful attention, indifference, incredulity, tolerance, skepticism.



**CONVENTION CHAIRMAN** Howard Ahl, with Mrs. Ahl, have reason to smile with the satisfaction of a big job well done.



**CIGAR PUSHERS** "Mike" DiSalle and George Renard at the stage entrance, ready for the Wednesday afternoon session.



**PRICE ADMINISTRATOR** DiSalle comes face to face with some of the questions he failed to cover in his convention address.



◀ **WALDORF HOTEL MANAGER** J. P. Binns (left) kept a watchful eye on the proceedings to see that everything ran smoothly.

**GENERALELECTRIC** ▶ was well represented: W. A. Wirene, Manager, Metals Industries Div.; W. A. Sredenschek, Asst. to Vice President, Purchasing; W. W. Becky, Lamp Sales Dept.; K. H. Runkle, Manager, Industrial Division.





## Information for All at the Convention Exhibits.....





## A Four-Point Program for Purchasing Agents

**By H. F. Jones**

E. I. du Pont de Nemours & Company  
President, N.A.P.A.

Keynote address at the 36th annual convention, National Association of Purchasing Agents.

THE 35th annual convention of this Association opened in Cleveland just a year ago. During the three days of that convention we were concerning ourselves with the state of business on this continent during the preceding year, and more especially with forecasts as to its future course. We had experienced a recessionary downturn in the spring of 1949. Many soft spots had become evident in the price structure. We seemed about to pass from a sellers' to a buyers' market. Then we had a series of strikes and threats of strikes early in 1950. Buying in anticipation of those strikes had the effect of halting, momentarily, the downward trend of prices. But the forecasts were for a continued decline in prices over the balance of the year, based on the assumption that business activity would taper off. We were advised to proceed cautiously and felt that we were, despite the predicted adjustment in prices, due for an extended period of good business.

Then we packed our bags and departed for home. We had hardly unpacked and cleared away the accumulated debris when the Korean incident occurred and all our hopes and plans were turned upside down. We entered the "scarce buying" period when everyone, from housewife to industrial buyer, was trying to lay in a large amount of everything "just in case". Within a few weeks, consumer as well as industrial stocks were wiped out. Deliveries lengthened and prices strengthened.

As communist aims became clearer, the necessity for us to take effective counter-action became evident, leading inevitably to our present preparedness program.

There can be little doubt in our minds as to the ultimate aims of Stalin and the members of the Politburo. They are the same as they were two years ago when Ralph Keefe spelled them out for us at our 1949 convention:

- Cruel compulsion
- Ruthless regimentation
- Insidious infiltration
- Merciless manipulation
- Planned poverty

Put them all together and they spell CRIMP. And make no mistake about it, that is exactly what they intend to do—to force men of all nations to accept their ideology and become stooges of the Kremlin.

### **Clear Purpose Needed**

Unfortunately, we cannot be equally clear about our own course of action. We seem to be, like Don Quixote, ready to ride off in all directions to defend the oppressed and right the wrongs of the entire world. We seem to have two foreign policies, or many foreign policies, or no foreign policy at all. We do what is expedient. We fire our United Nations Commander in the field for reasons which are obscure or non-existent. We take action on one side of the world which has little or no relation to what we do on the other side. We wait until we have been fighting the Chinese com-

munists six long months before we take action to stop selling them the material with which to wage war on us. We call out the riot squad and then sell the rioters the weapons with which to resist the police.

Adding to our uncertainty concerning our future, government—as such, and seemingly at all levels—has reached a new low in public esteem. A resolute Senator from Tennessee has had the courage, in the face of possible political suicide, to ferret out the graft, the corruption and unholy alliances which exist between government representatives and known gangsters and racketeers. The influence peddlers have shown, if nothing else has, that a socialistic government in competition with private enterprise in the banking business is unsound and does not belong in our system.

In these latter facts, I believe, lies our salvation, because in every difficulty there exists the seed of opportunity. I cannot remember ever before when investigations, such as we have recently had, have been so conducted in the limelight for the public to observe. Both the Kefauver investigation and that covering General MacArthur's dismissal have, I believe, been conducted impartially and within full view of the people. Our people are now in possession of facts which were never available to them before. And I have faith in our people to the extent that I believe we shall see some of the mess cleared up at home and that the power of public demand



Past President Ben Newbery takes time out to catch up on his "Purchase for Profit" reading.

will crystallize our effort to stop the drive of the communists for domination of the world.

We can see some results right now. Our government and our people are together behind our huge preparedness program, and will support it. It will be a difficult job, for two reasons. First, we are not at war. And secondly, it will have to be accomplished in addition to maintaining a peacetime economy. Carrying out this program is going to call for all the enthusiasm and cooperation of all segments of industry and all people in industry. There have been and will be many tight spots. There will be dislocations and hardships. People will be hurt, but they must believe that the over-all good of the free world will best be served if they give the program their full support.

#### **Purchasing Can Help**

We are fortunate to have with us as speakers during this convention a number of men who are intimately connected with the program. They are coming here to tell us about it and how it will affect us, not just to make speeches. The demands on their time and energy are many, but there is a very good reason why they have been willing to come here and talk to us: We can help them with their work. If we take pains to understand what they are doing, and tell others about it, and give them our support, we can help get this job done. We can then look forward to better times and a return to something like normal.

Mr. Wilson says that, barring a full-scale war, in two years we can carry the defense program on top of our normal peacetime economy, and do it comfortably. We purchas-

ing agents, as a group—as much as any other segment of management—can help to carry out this program successfully. We have for a long time now been considered an essential element of modern business management. The fact that these speakers have been willing to come here as representatives of the government indicates that we are considered important in this effort.

For the second time in a decade, purchasing has a tough assignment. Raw material is the life blood of industry, and if the raw material problem is solved we will be well along toward solving the whole preparedness problem. The essence of our assignment, then, is very simply stated. It is to do a better job of material management than we have ever done before. After we have made the analysis, we will agree that certain things we have been doing must be done better and some things which we have not been doing must be done.

We have all seen the N.A.P.A. code of ethics, which states the tenets of our profession. We should read it again and continue to practice it. Present conditions create purchasing problems which are peculiar to this emergency. We should examine our operations and see what these problems are, and then set out to deal with them. I would like to discuss with you a few of the problems peculiar to these times, and what we can do toward solving them. They are: inflation, controls, hoarding, and black markets.

On the inflationary front, we have prices at the highest levels in history. Mr. DiSalle and his Office of Price Stabilization have a difficult assignment. He is supposed to lasso prices at this high level and

hog-tie them. He has no power over wages. He is supposed to reduce food prices, but according to the law he can do very little about farm prices.\* He is beset every minute of his waking hours, and I suppose even summoned from his bed at night, by special interest groups who want price controls for everyone but themselves. We can help fight inflation by supporting Mr. DiSalle and the Office of Price Stabilization.

We can fight inflation in still another way, and that is simply by doing a better purchasing job. I don't mean merely arguing with suppliers over prices. In the face of high labor and material costs there is still a possibility of reducing costs by improving the efficiency of each segment of the business. The purchasing department manager can work toward improving the efficiency of his department. Efficient operation of the purchasing department entails the efficient procurement of material which, in turn, can supplement the efficiency of the production department. Efficient control of inventories can supplement the efficiency of the financial end of the business. Procurement of the right material—and only the right material—for the job can add its little bit to the over-all efficiency of the business. And the never ending search for substitute materials can add its share.

To repeat, this effort to stem inflation should not descend to the level of merely arguing with suppliers over prices. Our present price control law does allow for adjustments. When we are faced with a price increase on a commodity which we are buying, we have a definite responsibility to discuss the situation fully and impartially with our suppliers. A statesmanlike approach to the problem will go a long way toward developing that feeling of mutual respect which we try to develop between ourselves and our suppliers.

#### **Cultivate Diplomacy**

"Cork" Corcoran told a story at a meeting which I attended that describes very nicely the proper approach toward a problem of this kind. It concerns the manner in which the former president of his company handled a little situation several years ago. To truly appreciate the story, you would have to know Judge Robert North Bingham, the former ambassador to Great Britain and father of the present owner and president of the Courier-Journal and Louisville Times. He

was a native son of North Carolina, and was the personification of graciousness and good manners that seem so natural to the people of that state.

One day, as he was returning from lunch, he saw a young girl crying in the lobby. On asking her what the trouble was, the child told him that she had brought her pet guinea pig in to see if they would run its picture in the paper. While she was waiting for the elevator, a young lady came out of the first floor office and asked her permission to show the pet to her co-workers. "And while she was doing this," the child sobbed, "the guinea pig got away and now I can't find it."

Judge Bingham tried to reassure her, and then stepped into the first floor office and called over one of the men in that department, a young fellow over six feet tall by the name of Buchanan. He said, "This young lady has lost her guinea pig. Would you mind trying to find it for her?" In a short while, Buchanan located the animal and returned it to the girl, and she went happily on her way. He then turned to his boss and asked, "Who was that guy who asked me to look for that guinea pig?" His boss informed him that the "guy" happened to be Judge Bingham, the fellow who owned the place and, incidentally, paid him his salary.

"Well," Buchanan said, "it was a damn good thing he was so nice about it, or I would have told him to go to hell and look for the pig himself if he wanted it."

So the way we say a thing is often as important as what we say.

### Shun Black Markets

Another of our current problems is the black market. We might say that with our present system of controls it is impossible for a black market to exist. We may also say that all black market offerings are daisy chains, or that, like the pot of gold at the end of the rainbow, they just don't exist. But there has never been a rule made, nor a law passed, which can't be by-passed.

When tempted to deal in a black market operation, we may temporize and try to rationalize our action by saying that it isn't really a black market—it's just slightly gray. But a black market can't be anything but black, any more than a cow can be just a little pregnant. Sound, cooperative relationships built up over the years with reputable suppliers are the best possible antidote than can be prescribed for this kind of poison. The law of

supply and demand operates in the black market as well as anywhere else, and without the demand there can be no black market. So let's have nothing to do with them.

Hoarding is another of our current problems. I can't honestly say that industrial buyers were any less guilty of hoarding than were housewives, last summer, during the period of scarce buying. We were prone, at that time, to blame material shortages on the defense program. But the defense program hadn't even gotten the motor running, much less shifted into high gear. So I think we must all share the blame for that industrial shortage. But the type of hoarding I am thinking of now is not that type of hoarding. Perhaps, in fact, it shouldn't be called hoarding at all, but is closely related to it.

There's a brighter side. I have done a good bit of traveling during this past year, and have talked with a lot of purchasing agents. I have heard numerous instances where purchasing agents have released temporarily overstocked items to hard-pressed users in their communities. I have also heard of people loaning stocks to other users who were temporarily short of certain commodities. I see nothing wrong—and I can see inestimable benefits arising from this kind of an attitude on the part of purchasing people.

Closely allied to this question of hoarding is the movement of scrap into normal trade channels. Many of us control the disposition of scrap in our operations. We should watch this situation carefully and continually. With our present period of shortages, the prompt return of scrap into normal channels will go a long way to alleviate some of these shortages. We should adopt a

statesmanlike attitude toward this problem and not hold out for the last dollar, but realize that the best interests of all will be served if scrap returns to production at the earliest possible moment.

### Living with Controls

Last, but not least, is this problem of controls. We may feel that we are hurt by some aspects of our control program, or that controls are good for everybody except ourselves. But we must realize that, with all its imperfections, it is the best that we have been able to develop in this half-war, half-peace economy of ours. We should give the program our full support and learn to live with it.

If we are sometimes tempted to think that controls are good for everybody but us, then we might be tempted to take the next step—to ask for additional controls. We should be very chary of this idea. We should realize that controls, once imposed, are very difficult to get removed.

We must realize that when we ask for more controls, we are playing the communists' game, because the philosophy of communism is designed to submerge the individual in an all-powerful political group. It is a theory that man exists for government, not government for man. It is a blueprint for the destruction of the dignity and spiritualism of the individual in favor of the grandeur of the state.

These are some of the problems. Let's remember that the solutions to problems come from individuals, not from corporations. That means you. So let's do a good management job—a better and more effective job—in the purchasing department.



National Secretary George Renard with New York Association President R. Park Lamborn.

# Meeting the Problem of Strategic Materials

By **Colonel Willard Chevalier** Executive Vice President, McGraw-Hill Publishing Co., Inc.

N.A.P.A. Convention address

**W**E are trying to create a new kind of economy in this country of ours. I can best describe it as an "arsenal economy."

An arsenal economy is not a war economy by which a nation devotes its political, social, and economic energies toward winning an all-out war. It is not a military economy wherein the military forces of the nation take over the economy to direct it and dominate it. We are not in that situation. An arsenal economy, as I use the term, is the normal economy of a nation that recognizes and accepts national security as a major objective, and that accepts realistically the necessity for building and maintaining an arsenal for the production of munitions and for the maintenance of its armed forces in a state of continuous readiness.

It is too bad that the word "emergency" so often is used in speaking of the present mobilization. An emergency implies a temporary condition, a situation moving quickly

to a climax. But there is nothing temporary about this arsenal economy we now are creating. It may well prevail for as long as most of you in this room will live.

But there is no reason at all why we should be panicky about that. Before 1914 most of the large nations of Europe maintained arsenal economies. Year after year they devoted a considerable share of their national income to producing arms and maintaining armed forces. And that did not prevent them from going ahead in other fields and raising their standards of living. We should be able to carry such a burden much better than were the people of Europe during the years before 1914. We have a greater productive capacity to do the job; certainly we have infinitely more to lose if we do not do the job.

## The Transition Period

Of course, we shall not become an arsenal economy overnight. We first must have a period of shifting

over — a transition period. As Charles E. Wilson, Director of Mobilization, has set up the target, it means that by 1953 we shall have provided for:

1. The weapons needed to equip an armed force of 3½ to 4 million, together with a supply of weapons for our allies.

2. A stockpile of weapons which, with current production, would be sufficient to carry on an all-out war for a year.

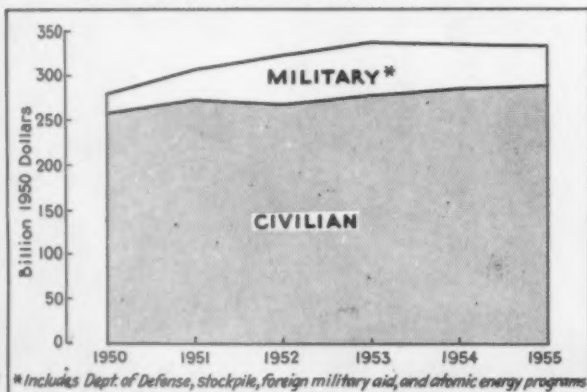
3. The manufacturing capacity by which we could multiply rapidly our production of weapons if all-out war should come.

4. An increase in the productive capacity of industry that will permit us to resume the expansion of our civilian economy.

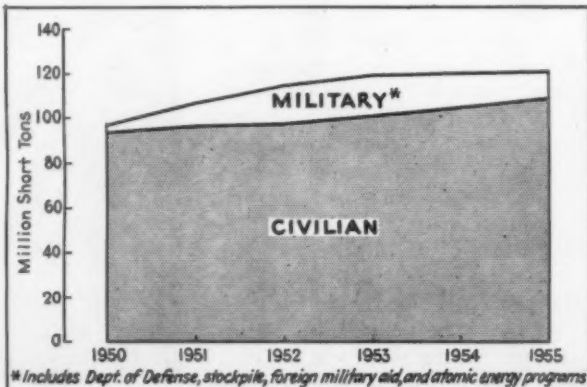
## Impact on our Resources

If we are spared an all-out war, this rearmament program should not, even at its peak, absorb more than 20% of our total national product. And once the arsenal is built

**GROSS NATIONAL PRODUCT  
MILITARY and CIVILIAN ESTIMATES**



**STEEL PRODUCTION ESTIMATES**



—once the initial weapons, the stockpiles, and the productive facilities have been provided—maintenance of the arsenal will require less. It may take as little as 10% of the national product.

I have prepared a few charts to give you a rough idea of what such a program means in relation to our total resources. In the very nature of our mobilization program, they may be quickly out of date.

One reason for that is that the technology of modern war moves at a terrific pace. Today the electronic equipment alone on a medium bomber costs as much as the whole plane cost at the end of World War II. That means, of course, a large shift in requirements for strategic materials.

Also, we dare not ignore the unhappy fact that during this transition to an arsenal state there will be no adjournment of politicking and "pressure grouping" such as all-out war would stimulate. Drafts on materials for military purposes are being tempered to the demands of pressure groups. I wish we had seen the last of such business, but I doubt that we have.

Chart No. 1 represents the probable trend of our gross national product from 1950 to 1955. The top line is the estimated gross national product over the next five years. Normally, as you know, we have an increase of about  $2\frac{3}{4}\%$  a year in the gross national product. The line at the top of the shading defines the lower limit of what is necessary for our military needs. This leaves the shaded area below as the part of our gross national product that can still be devoted to the needs of the civilian economy. As you can see, this program offers by 1955, an amount available for civilians that would be substantially greater

than that of 1950—and we were eating pretty high on the hog in 1950.

Overall figures of this kind do not tell the whole story. Also, such averages never hold for every part of the economy. In order to achieve that average, we must cut deep in some sections of the economy while other sections are but slightly affected. So, in order to bring out that point without getting too deep into the details, I have selected three of the strategic materials that we hear the most about and that are most used.

Chart No. 2 is the picture of steel production. The upper line represents our total steel producing capacity as we can foresee it until 1955. It shows what we shall have to take for our defense program, leaving the shaded area to indicate what is left for civilian consumption. As you see, there will be a slight cut-back in this during these next two years, and an unusually large part of the civilian supply will be allocated for defense supporting capital goods, but eventually we should return to a point at which the supply of steel for civilian use will not have suffered.

But the picture with respect to other materials hits harder and cuts deeper. Chart No. 3 shows refined copper. Now we see one of the truly critical materials. This chart indicates very little possibility for new sources of copper to come in during the next five years. And, of course, when we begin to cut deep on a material that touches so closely the life of the electrical industries, we begin to spread the shortage out amongst many of our people in many of their interests.

Chart No. 4 shows the picture for aluminum. The amount required for military uses will be very heavy,

as in the case of copper. But here it is possible to expand greatly the supply and thereby make up the totals needed for the combined civilian and military economy out of increased productivity rather than out of a painful cut in the civilian economy.

On all these charts, the lines representing materials available for civilian consumption dip during the years 1951 and 1952. That is the transition period, the tough period, through which we must pass before we can achieve an economy in which we can maintain our arsenal without disrupting production of other kinds.

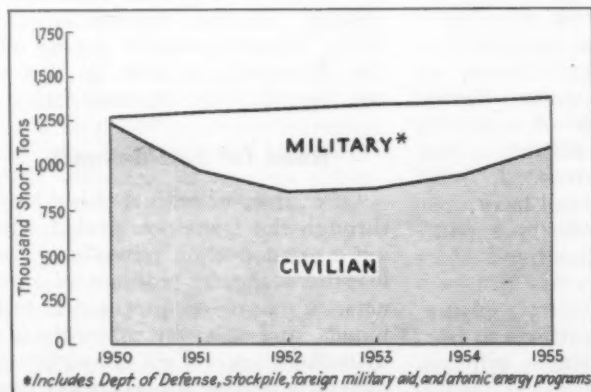
### Materials—the Key Problem

This matter of critical materials is the crux of our transition problem. If we get the materials, we have — or soon shall have — the trained manpower and the necessary manufacturing facilities to support high-level production in civilian as well as military lines. But if we fail to meet the problem of the critical materials, the period of transition and shortages could drag on for a long time.

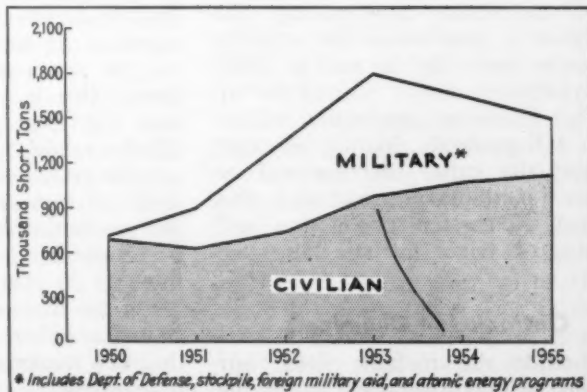
The most important step, the one without which everything else fails, is to increase production. I can tell you a really encouraging story about what our basic industries are doing to increase the production of strategic materials. I do not mean to slight the saving of strategic materials by the substitution of other materials for them. That can be a tremendous help. But that is a full-length story in itself.

When it comes to expansion, there is no doubt that industry is making a tremendous effort in the raw materials field. The steel companies, for example, plan to increase their

REFINED COPPER PRODUCTION ESTIMATES



REFINED ALUMINUM PRODUCTION ESTIMATES



capacity from the present 104 million ingot tons to 120 million ingot tons or more by mid-1953. That is more than a 20% increase in a little over two years.

The aluminum industry is expanding even more rapidly. In this country we are now producing about 800,000 tons per year. That will be raised to 1,300,000 tons by the end of 1952 and 1,800,000 tons sometime in 1953. Our domestic capacity will then be triple our production before Korea. And, in addition, there will be a large expansion of capacity in Canada which will provide us with more aluminum imports.

Equally strenuous efforts are being made in the case of other non-ferrous metals, but we cannot look for the same spectacular increases all along the line. In some cases, new deposits are very difficult to develop. And quite a few of these strategic metals are produced primarily in foreign countries where we must rely on the cooperation of our allies to increase the supply.

In the case of copper, for example, no important expansion in production can be expected in the next two years. There are very few new copper sources that will mature during that period and the increase in requirements of friendly foreign nations will probably equal all the additions to world production that may be brought in. There are several important copper projects in some stage of planning or development, but they will not get into production during the next two years.

Zinc production can be increased more quickly than copper. If the new subsidy plan for zinc is carried out, and if the necessary labor is available, the industry may be able to step up zinc output by 50,000 tons per year. And it may be able to hit this higher rate within six months.

There are other strategic items in respect to which the present urgency of military demand may prevent us from appreciating the increase in production that actually is under way. By the end of 1952, molybdenum output should be up 25%. Domestic production of cobalt will probably double, although almost the entire increase will be taken for military use during this period. Tungsten production will double or triple during these two years.

### **Outlook for Chemicals**

Outside the metallic field, our biggest supply problems lie in the chemicals. The chemical industry

is planning an 11% expansion of capacity in 1951 alone. And many plans for further expansion in 1952 have already been completed. The largest expansion is in capacity for making synthetic rubber, heavy chemicals, and certain organic chemicals which are the basis for rubber, plastics, and synthetic fibers.

The rubber problem is the closest to being licked; in fact, we should have an adequate supply by the end of this year.

Sulphur is a longer range proposition. Several new sulphur developments are under way in the Gulf area. With these new developments, the use of auxiliary sources such as pyrites, and better conservation in the use of sulphur, it may be possible to bring supply in balance with demand some time in 1952. New plants to make sulfuric acid are being built to convert these increased supplies.

Among the other heavy chemicals, the most impressive plans for new capacity concern chlorine. Chlorine output will rise to triple the pre-Korea rate by some time in 1952, and some of this growth is already evident.

Production of organic chemicals has been bottlenecked by the short supply of coke, from which they have principally been made. But now the industry is building rapidly the facilities to obtain these chemicals from oil and natural gas. Most important is the additional capacity planned for benzene. Within the next two years, this will amount to a 60% increase in total output. These increased supplies will permit considerable expansion in the production of plastics, synthetic fibers, and many other chemical products.

### **Capacity Takes Time to Build**

Finally a word about textiles. We all know that the supply of textile items cannot be quickly increased where there is a shortage of natural fibers. But spectacular plans are in progress to increase our supply of man-made fibers. These new developments are coming so fast that it is hard to put a statistical estimate on them. But it seems quite possible that the total output of synthetic fibers—rayon, nylon, fiberglass, and all the rest—will increase 25% by 1953. If it does, we shall have seen the synthetic fiber industry expand its production more than five-fold in the past 20 years.

On the basis of industry's expansion plans, there is no reason to fear that raw material shortages will last indefinitely.

You will note that the target dates

for these great expansion programs are two years away, in many cases. Over the next year, the pinch on materials supplies is likely to get worse rather than better in many lines for the following reasons:

1. It takes a long time to complete capital expansion projects in some of the most vital materials industries. But the greatest military needs are just ahead, in late 1951 and early 1952.

2. The military program requires large quantities of some of the very materials of which it is hardest to expand the supply. Among these are nickel, cobalt and columbium.

3. Expansion programs themselves take scarce materials—lots of them. This is why structural steel is one of the tightest items right now. Altogether, construction of new industrial facilities will use more steel and copper than will strictly military production until the end of this year.

### **Living in the Shortages**

In this situation, there is a great temptation to say, "Let's cut down some of this capital expansion and free the materials for current use." But that is where it becomes important to remember our paramount objective—the transition to an arsenal economy. The great demands for materials to go into plant expansion are temporary. If we can live with them, and with the controls over materials required by these demands, we can be rid of the controls in a relatively short time.

But some of the demands of military production are permanent. They will continue as long as we must maintain our arsenal. If we do not expand our capacity for the production of strategic materials, military requirements in the face of limited capacity may force controls for a much longer period. We are fortunate that the Office of Defense Mobilization is encouraging this expansion with the deliberate objective of making controls unnecessary by 1953. We are asked to put up with the inconvenience now, so that we may be rid of the controls later.

### **Need for Self-Reliance**

Of course, we are not going to get through the transition period without a great deal of individual effort, in purchasing, in redesign of products, in improved production techniques, and in every other phase of manufacturing. Fair allocation of materials will help make the transi-

(Please turn to page 288)

# The Battle of the Fibres

By A. W. Zelomek, International Statistical Bureau, Inc., New York

N.A.P.A. Convention address

**W**HAT is happening in the textile industries—what has been happening for three or more decades—is more than a battle; it is a revolution. This revolution is by no means ended.

On a poundage basis, total fibre consumption showed an increase of 22% between 1937 and 1949. This was slightly more than the increase in population. In one sense, this increase was bigger than it appears. The practical utility of textile fibres was increased greatly during this period by an increase in wearing quality and a rather general reduction in the weight of garments.

Natural fibres lagged during this period, showing an increase of only 6%. Man-made fibres, on the other hand, showed a gain of 218%. On a poundage basis, the rise in total consumption was slightly more than a billion pounds. Almost three quarters of this was accounted for by man-made fibres.

The increase in the use of synthetic fibres is a monument to the results of chemical and physical research, backed up in its later stages by highly intelligent marketing programs. There have also been marked shifts in consumer demand, reflecting basic economic and social changes, that have influenced the textile revolution. Population migration from farms to metropolitan areas, and from crowded city centers to suburban areas, has stimulated home ownership and the use of household textiles, has stimulated per capita consumption and the use of more highly styled items, and broadened the market for sportswear and casual garments.

We have had abnormal conditions in the textile trades during the past decade. The war economy produced

a relative shortage of textiles for the civilian market; sellers' markets continued well into the postwar period. Although there was a period of readjustment in the industry, the invasion of Korea again creates a semi-war economy, which encourages some trends and discourages others.

There are two important developments connected with these abnormal conditions.

One is the trend toward integration in the textile trades. This would probably have developed anyway, but it was certainly encouraged by the sellers' markets which prevailed during much of the past decade.

The other is the high price of wool. This is particularly important at the moment. Combined with the government support program for cotton, the high wool price has greatly encouraged mixing and blending and a greater use of synthetic fibres.

With these facts in mind, industry changes can be summarized in five major points.

## Five Basic Changes

1. *Woolen and worsted industries are at a disadvantage, so far as civilian markets are concerned, and will be for some time.*

The industry as a whole will be helped to some extent by military demand; but the fact remains that it is being seriously damaged by the present price differential between wool and other fibres.

There are two types of concerns, however, which will make a better showing than the industry as a whole, so far as the civilian market is concerned.

One is the type which, by aggressive promotion and advertising, has managed to carry its own trade name through to the ultimate consumer, establishing a demand for its product. Firms of this class are chiefly in the high quality category, and in many cases have a definite working association with high quality cutters.

A second group of firms, limited in extent, has followed a very aggressive policy in the technical sense. They have participated actively in research to improve processing machinery and the handling and finishing of wool textiles in the plant.

This has involved heavy investments, not only in research programs but in new plant and equipment. In the long run, however, these investments should pay off in terms of the competitive position of these firms.

2. *The distinction between cotton and rayon mills has tended to narrow.*

There are some mills that do primarily a cotton business and others who are concentrated chiefly in rayons. But the leading firms in each of these industries have developed a high degree of flexibility in plant operations.

Moreover, these firms have shown foresight in their experimental and development programs. They have taken the lead in developing new fabrics and finishes, are constantly experimenting with new mixtures and blends and, in many cases, supplement these efforts with promotional and merchandising programs which assure high quality in the finished product and keep the mill's name before the public.

3. *The volume of finishing done by what were formerly gray goods mills has increased dramatically, particularly in the rayon field.*

This integration was partly a result of conditions that prevailed during most of the past decade. For some classes of fabrics, however, the fact that weaving and finishing are done by the same concern has probably stimulated research in fabric development. It certainly has stimulated investment in new equipment, the machinery in some of these mills having been totally replaced within the past few years.

4. *The position of the independent converter has been correspondingly weakened.* This is particularly the case in connection with fabrics that are staple or semistaple in character.

5. *Among clothing manufacturers, the impacts have been somewhat less severe.* The introduction of new fibres has brought new fabric types and changes in quality. But the individual cutter, in any given section of the apparel trades, has merely had to go along with these changes.

There has been some redistribution of business among the cutting trades. For example, casual garments and sportswear are much more important now than they were a decade ago. Some new cutters have specialized in this type of garment; others have added these garments to their regular lines.

On the whole, garments have tended to become lighter and more durable.

### **Current Trends and Prospects**

At the moment, there are a number of new fibres which have a great deal of promise in certain fields. Examples are dacron (formerly fibre V), vicara, orlon, dynel and some others of different names having marked similarities to those mentioned here.

Current production in all of these cases is quite small, 2.5 to 5 million pounds annually. But in each case there are plans for marked expansion and output will be 10 times as great, or more, within the next two or three years.

Each of these fibres has been on the market long enough so that some conclusions can be drawn about its prospects, and about the part it will play in the textile revolution. Two general conclusions can be stated.

1. *Each of these fibres will probably find a few fields to which its qualities will be particularly adapt-*

*ed and in which it will make rapid progress.*

Filament yarn nylon, for example, is especially well adapted to the knitting process. It is the spun nylon that will be used chiefly in woven fabrics.

Dacron has remarkably favorable prospects in the suiting field.

Orlon, which has had some experimental use in suitings, seems to be better adapted for heavy fabrics.

Dynel, to judge from current results, is well suited to pile fabrics and similar uses.

Vicara, the only protein fibre in the list, is remarkably versatile in all kinds of blends. Because of some of its wool-like characteristics, and the present high price of wool, its entire output, and much more, could be sold as a wool substitute. Instead, its distribution has guided it logically into markets that will be permanent, and has emphasized blends with other fibres in men's hosiery, men's and women's sweaters, upholstery fabrics, and flat goods of all types.

Most of these fibres have other special uses, apart from those mentioned above, to which they are particularly adapted. Many of these are in the industrial field. In filters, for example, every new fibre has new chemical properties, which give it special value for some types of industrial processes.

2. *Mixing and blending will become more and more important in the next decade.*

No single fibre is the best. Each one has its own intrinsic properties. And though most of them, used in an unadulterated state, will meet certain demands, the variety of "special property" fabrics that can be developed by blending and mixing is practically unlimited.

We are, I am convinced, entering a textile economy in which the variety of fabrics will be almost unbelievable. It will be possible to decide on the exact properties that a finished garment should have, and then create the fabric from which it can be made by mixing and blending the synthetic and natural fibres.

### **Conclusions**

Let me sum up briefly the chief factors and trends involved in this textile revolution.

First of all has been the progress in the laboratory, which has created new man-made fibres having special properties and characteristics. There will be more of these as time passes.

A second influence has been the war and post-war conditions of the past decade. This has created favorable markets for textiles, has made it possible for processors to invest great amounts of capital in research and new equipment, and has supplied a rising level of real purchasing power.

Third, there have been political and social changes, which have helped stimulate the demand for household and apparel fabrics and at the same time to broaden their diversity. In the apparel field, the rising importance of casual garments has created markets for new fabrics that would have been harder to find in regular apparel. In household textiles, the suburban migration and the building boom have not only stimulated production but have created many new homes, in which a wide variety of decorative fabrics can be used.

### **Merchandising Improved**

A fourth factor has been a great improvement in merchandising. The new fibres are being produced by large companies, who have learned that a dollar in research expense is more than repaid. They apply this to their marketing as well as to their technical research. As a result, there are fewer mistakes made in introducing new fibres, they are guided more intelligently into those markets in which their own properties will be most important, and progress is in all ways speeded up.

It seems to me that we are in the very early stages of a new period, which will be most fascinating. This will be a period of mixing and blending.

There has been a tendency from time to time, at least in some markets, to make something, and then try to sell it to the consumer. This policy was not too damaging when there were only a limited number of fibres to consider.

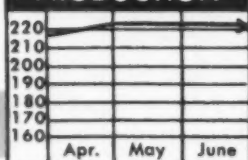
Now I foresee a far more intelligent and interesting approach for the future. As the number of new fibres increases, it becomes possible to consider what properties are most essential in this garment or that, and then produce a fabric that will meet these requirements.

It seems to me that this will lend inevitably to much greater satisfaction for the public at large, and an opportunity for great rewards to fibre producers and processors who maintain their leadership in this phase of the textile revolution.

Trend of Business  
As Seen In Current  
News & Statistics

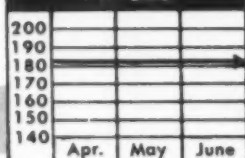
# Where We Stand

## PRODUCTION



190				BASE	LATEST	MONTH AGO	YEAR AGO	% OF CHANGE IN MONTH      YEAR	
180									
170									
160									
	Apr.	May	June						
Industrial Production Index.....1935-1939=100				223 (est.)	222	195	+0.5	+14.4	
Steel Production (Weekly).....000 net tons				2,063	2,077	1,929	-0.7	+ 6.9	
Electric Power Production (Weekly).....mil KWH				6,734	6,567	5,921	+2.5	+13.7	
Bituminous Coal Production (Weekly).....000 net tons				9,925	9,620	10,529	+3.2	- 5.7	
Auto, Truck & Bus Output (Weekly).....units				145,719	148,681	191,417	-1.9	-23.9	
Petroleum Output (Weekly).....000 bbls.				6,087	6,078	5,228	+0.1	+16.4	

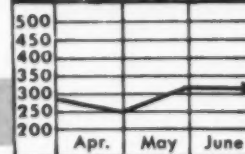
## PRICES




170				BASE	LATEST	MONTH AGO	YEAR AGO	% OF CHANGE IN MONTH	YEAR
160									
150									
140									
	Apr.	May	June						
All Commodities (BLS).....				1926=100	181.9	182.2	157.6	-0.1	+15.4
Farm Products.....				1926=100	197.5	197.1	166.8	+0.2	+18.4
Metals & Metal Products.....				1926=100	189.3	189.5	171.7	-0.1	+10.3
Building Materials.....				1926=100	227.3	227.5	200.2	-0.1	+13.5
Steel Billets (Pittsburgh).....				net ton	\$56.00	\$56.00	\$53.00	0	+ 5.7
Steel Scrap, heavy melting, Pitts.....				ton	44.00	44.00	44.75	0	- 1.7
Copper, electrolytic.....				lb.	.241/2	.241/2	.221/2	0	+ 8.8
Rubber (rib-smoked sheets).....				lb.	.66	.66	.287/8	0	+128.1
Wheat, No. 2.....				bu.	2.695/8	2.701/4	2.467/8	-0.2	+ 9.2

## TRADE

(Dept. Store Sales)

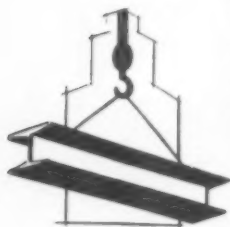


	BASE	LATEST	MONTH AGO	YEAR AGO	% OF CHANGE IN			
					MONTH	YEAR		
	Apr.	May	June					
Dept. Stores Sales Index (Fed. Res.).....1935-39=100				311	318	302	-2.2	+ 2.9
Commercial Failures (Dun & Bradstreet) ....no.				172	181	164	-4.9	+ 4.8
Freight Carloadings .....cars				813,326	803,337	796,041	+1.2	+ 2.2

## FINANCE

Stock Prices (Standard & Poor's).....1926=100	173.4	178.8	150.7	-3.0	+15.1
Bank Clearings (New York).....mil \$	8,117	8,179	7,741	-0.8	+ 4.9
Federal Reserve Credit.....mil \$	23,783	23,913	18,270	-0.5	+30.2
Currency in Circulation.....mil \$	27,499	27,287	26,993	+0.8	+ 1.8

**STEEL:** Although reflecting some of the uncertainty prevalent in the current market, comment on the steel situation at the N.A.P.A. convention tended definitely to an optimistic long-term view.



Ernest T. Weir, chairman of the National Steel Corporation, pointed out that allocations now apply in a very uneven manner to various steel products, and considerable fluctuations from time to time can be expected. Thus, any attempt to give a detailed estimate of future steel supply would be sheer speculation, he declared.

Nevertheless, Mr. Weir said that by 1953 this country will have an ingot capacity of about 118,000,000 tons of steel, about 14,000,000 tons above the capacity calculated as of January 1, 1951. Reviewing the present and planned military requirements, and assuming that there would be no full-scale war, he declared that in view of the additions to steel capacity already made, and those yet to come, "it is difficult for me to see how there can be any genuine shortage of steel for any great length of time." If any shortages develop, he said, the key factors will be lack of other critical materials and lack of manpower.

One of the raw materials in which the industry is in bad position, said Mr. Weir, is scrap. He said that the average inventory of scrap in the entire steel industry is down to 21 days, when 60 days is considered normal. Some individual mills are operating on almost a day-to-day basis, he said.

Colonel Willard Chevalier, executive vice-president, McGraw-Hill Publishing Co., Inc., whose address is printed elsewhere in this issue, also foresaw temporary dislocations in the steel supply-demand picture, but an eventual balancing out. He showed how steel production capacity would increase steadily until 1955, with expanding military and related requirements reaching their peak in the next two years. The slight cut-back in steel available for civilian consumption, and the unusually large part of the civilian supply allocated for defense supporting capital goods will create some shortages, he implied. "But eventually", he declared, "we should return to a point at which the supply of steel for civilian use will not have suffered." According to the chart used with his talk, the military demand (which includes Department of Defense, stockpile, foreign military aid, and atomic energy programs) would begin to level off toward the end of 1952.

Strikingly optimistic and in contrast to opinion in some trade circles, was the statement made a couple of weeks after the convention by Joseph L. Block, vice-president in charge of sales, Inland Steel Company. He took a point of view contrary to the predictions by government officials that 1952 will be a year of short supply for steel and one of substantially reduced civilian production. On the premise that the international situation remains unchanged, Mr. Block said he believes that during the first half of 1952 there will be more, rather than less, steel available for civilian production, and that the present overall shortage may even disappear. His reasons in brief: capacity is rapidly being expanded; steel required for expansion will be out of the way 6 to 9 months hence; "defense supporting" industries will have received so much steel that their inventories will become abnormally high; direct military requirements for steel will not be as great as anticipated; higher taxes and credit restrictions may cut down demand for consumer hard goods.

**NON-FERROUS METALS:** This is the outlook on metals as expressed in the convention forum:

**Aluminum** — Ralph O. Keefer, Aluminum Company of America, said that with military requirements for the metal increasing, it appears there will be less and less available for civilian purposes in the coming months. Primary metal production is increasing, but imports are decreasing. Short-range supply situation is not encouraging, but the long-range prospects are bright.

**Brass and Bronze** — Wallace B. Burnet, The Imperial Brass Mfg. Co., said brass mills are working on a day-to-day basis due to their inability to get copper and zinc. CMP may ease the situation, and some help can be obtained from scrap. Some mills have only recently entered July production schedules because of CMP starting July 1. Some change in brass and bronze prices can be expected.

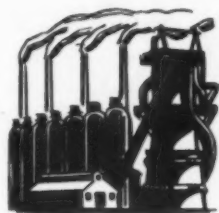
**Copper** — A. C. Bull, Pioneer Service & Engineering Company, said fabricators are using the red metal at

a rate exceeding deliveries from the producing industry. Action must be taken to place the price of copper scrap in its proper relationship to the frozen price of raw copper. CMP may help supply of copper to needed industries. Steps will have to be taken to bring domestic price closer in line with the higher world price of copper.



## at the Annual N.A.P.A. Convention

**Lead** — J. J. Sharkey, Olin Industries, Inc., said the unusually high demand for primary lead is in excess of available supply. The domestic ceiling price has continued at the 17¢ level, while in the export market prices range from 20¢ to 22¢ per pound, f.a.s Gulf Ports. Some reports say up to 26¢ has been paid by European consumers. In view of this disparity, we must expect imports to remain at levels below the 1950 period.



**Zinc** — Mr. Sharkey said demand continues in excess of supplies. Expected consumption of 1,000,000 tons makes it doubtful whether

foreign concentrates can be obtained in sufficient volume to make up the difference between domestic production and demand. Higher world prices, as compared to our ceiling prices, will result in less foreign zinc, particularly in the form of concentrates, being available for the U. S. market.

**Nickel** — Harold A. Berry, Ingersoll Products Division, Borg-Warner Corporation, said the outlook for nickel for civilian use is very poor, even with end-use restrictions. Defense orders for June had already exceeded the available supply.

**Cadmium** — Mr. Berry said too restrictive measures in Order M-19 had caused N.P.A. to relax the order somewhat. As government requirements increase, there is a possibility that present allocations will have to be reduced.

**Tin**: Anthony D. Seragusa, United States Steel Company described how the Reconstruction Finance Corporation had reduced the price of tin to domestic consumers to \$1.36 a pound, in a well-considered series of steps. He indicated that further cuts were possible. This was borne out during June, when the R.F.C. continued cutting the price. Up to this writing there had been six cuts in June for a total of 33¢, bringing the price of tin to \$1.06 a pound.

**FUELS**: Burl S. Watson, vice-president, Cities Service Oil Company, declared that although civilian demand for petroleum products will continue its postwar steady upward climb, the industry is prepared to meet both these demands and military requirements. He said the civilian demand will probably reach a total of 7,416,000 barrels daily. He pointed out that military requirements could not be stated for security reasons.

Mr. Watson, urging cooperation from purchasing agents, said that lack of adequate storage facilities might prove a major obstacle to meeting increased demands this year

and that there was an urgent need for maximum utilization of available storage space. The government and the oil industry are asking all users of fuel oil to fill up their tanks during this summer off-season, he said.

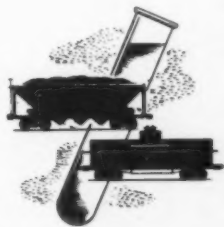
The coal industry "is not only equipped and ready to satisfy the requirements of a semi-wartime economy, but probably has an excess capacity of some 20%", declared George H. Love, president of Pittsburgh Consolidated Coal Company, Inc.

He stressed the desirability of keeping an excess capacity of bituminous coal and suggested a 5-point program to do so. He called for the following measures: (1) raising of the depletion reserves for coal from the present rate of 5% to 10% annually; (2) protection of the coal industry against the "dumping of imported residual fuel oil"; (3) reduction in the high cost of transportation for coal; (4) increasing coal research further in order to equal what the petroleum industry has achieved in "skimming off various fractions for higher price uses and leaving only the residual to compete with coal"; (5) maintenance of a sound price structure. Prevention of coal users' exploitation of the industry excess capacity for the purpose of forcing prices down to a point where the industry can no longer maintain "adequate reserves, proper preparations, proper standards of safety and labor relations."

**CHEMICALS**: Continued shortages in several of the critical heavy chemicals were predicted by W. P. Sheppard, Jr., Merrimac Division, Monsanto Chemical Company. The tightness in sulphur — most apparent in respect to sulphuric acid, but also affecting sodium bisulphite and aluminum sulphate — may not be relieved for two years. He said some semblance of balance had appeared in the supply and demand of soda alkalies, with the exception of the dry caustic. New production is not expected to make ground and flake any easier. Chlorine is still short and new production will not catch up this year.

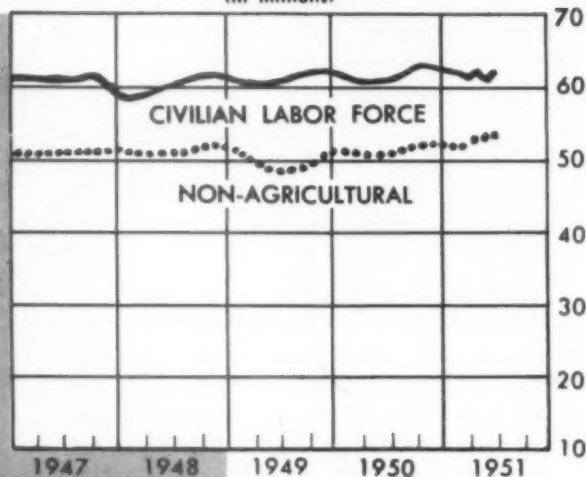
P. J. Clarke, Rohm & Haas Company, said there has been no drop in the demand for basic organic chemicals. Despite increased production, enormous consumption

continues, and conditions through the first half of 1952 would be critical. Benzene and its derivatives, particularly phenol, continue in heavy demand. The drain that synthetic rubber is putting on styrene supplies will prevent an expected increase in phenol supplies from doing any more than creating a rough balance in supply and demand.



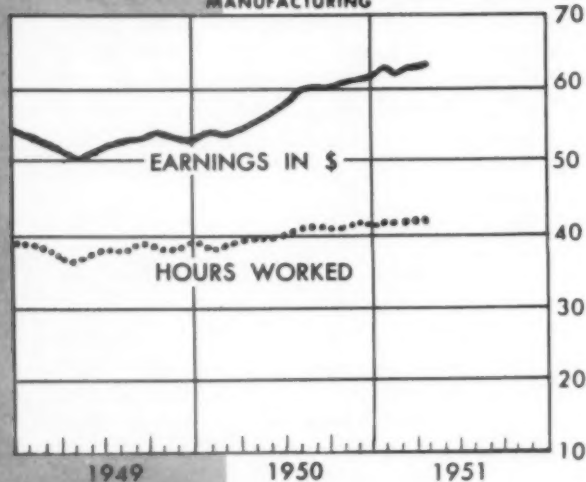
## THE PULSE OF BUSINESS

**EMPLOYMENT**  
(in millions)



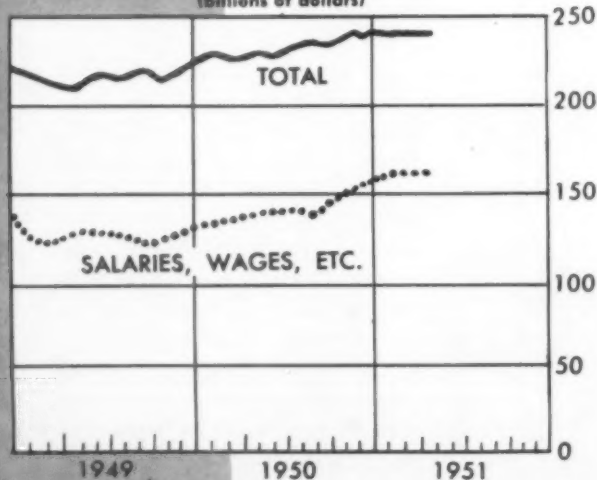
Source: Bureau of the Census

**AVERAGE WEEKLY EARNINGS AND HOURS**  
MANUFACTURING



Source: U.S. Department of Labor

**PERSONAL INCOME**  
(billions of dollars)



Source: U.S. Department of Commerce

**Diagnoses by experts** at the annual convention of the National Association of Purchasing Agents found the pulse of business generally low at present, with traces of erratic behavior increasing, and obscure indications of what is to come. Robert C. Swanton, chairman of the N.A.P.A. Business Survey Committee said that unnatural booms caused by scare buying since the Korean outbreak had created burdensome in-process and finished goods inventories, and a terrific unbalance in raw materials inventories (cf. Figures in the manufacturers' sales inventories and new orders page of this section). "These conditions" he said, "exist today and are unhealthy."

**Mr. Swanton, summarizing** the committee's monthly report, said that order backlogs have dropped off for the third consecutive month, and production is easing off. Defense orders have increased, he said, but their effect has not been felt over a very wide area of industry. The immediate future seems to offer quite gloomy prospects for many manufacturers, he declared.

**The outlook for the remainder** of 1951, according to Martin Gainsbrugh, chief economist of the National Industrial Conference Board, "is for a moderate upward trend in total business activity, including both dollar volume and physical output." This would result from planned increases in defense procurement and capital expenditures by business. He looked forward to a continued softness well into the third quarter, particularly in view of the present condition of inventories. In the light of present conditions, he said, "it seems quite possible that third quarter output of consumer goods under announced controls will equal or exceed current consumer demand."

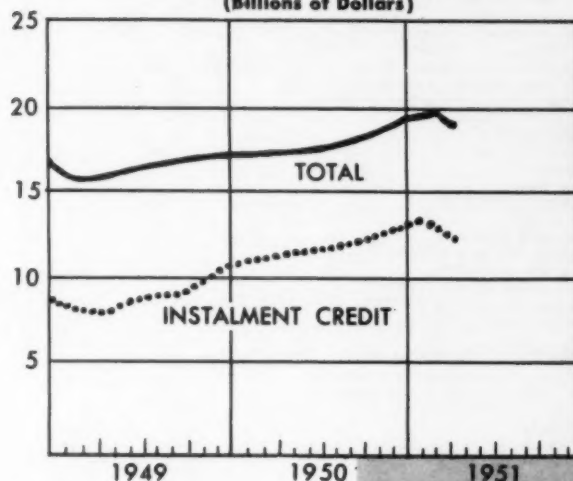
**Mr. Gainsbrugh, however,** said that although the supply of consumer goods will stay large, inflationary pressures on prices will be created by the combination of price ceilings and the growth in disposable income.

**"Unless the consumer** can be convinced of the personal and national desirability of saving," he declared, "the rise on disposable income and the resulting competition for goods must exert a steady inflationary pressure on the general price level and could give the consumer sector all the earmarks of scarcity even though aggregate supplies continue at satisfactory levels." These earmarks — black markets, under-the-table-buying, upgrading, etc. — may be much more extensive if the price level is subjected to any considerable rollback, he said.

**As this was written,** the Senate Banking and Currency Committee had approved an 8-month extension of price, wage and rent controls, but included in the bill a ban on rollbacks in the price of meat or any other item under regulation. Michael V. DiSalle, Director of Price Stabilization, declared the following day that these Congressional moves would heighten inflation, force price increases and deprive the public of more than two billion dollars in planned price reductions.

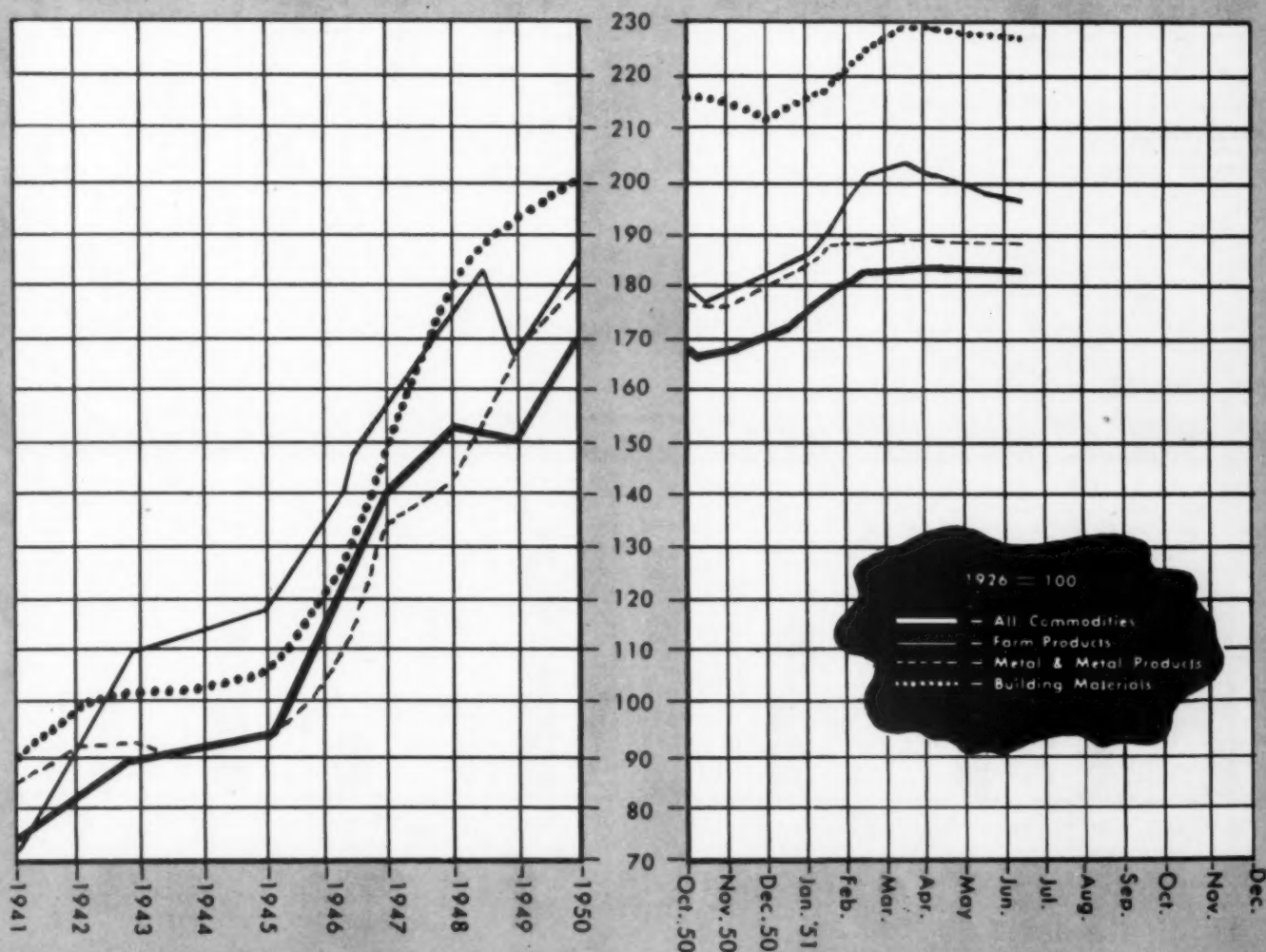
**Economic indicators** on these two pages show mixed tendencies. Employment in metalworking stopped its upward trend between mid-March and mid-April, probably reflecting cutbacks in the output of passenger cars, television sets and other consumer durables. The overall employment situation continued strong, however. The workweek stayed at the same high level, and gross weekly earnings were about the same at mid-April as they were in the previous month. They are, however, \$7.29 over a year ago, reflecting the lengthening workweek and advances in wage rates put into effect before wage stabilization became effective. Personal income continued to rise. Governmental restrictions appeared to be having effect on consumer credit, particularly in regard to instalment buying.

### CONSUMER CREDIT (Billions of Dollars)



Source: Federal Reserve Board

### THE PRICE PICTURE



# MANUFACTURERS' SALES, INVENTORIES AND NEW ORDERS

## Value of Manufacturers' Sales Seasonally Adjusted (Millions of Dollars)

All Manufacturing	16,216
Durable goods	6,817
Iron and Steel	1,718
Nonferrous metals	440
Electrical machinery	738
General machinery (exc. elec.)	1,085
Motor vehicles & equipment	1,220
Transportation equipment (exc. motor vehicles)	284
Lumber and timber products	359
Furniture & finished lumber products	290
Stone, clay & glass products	380
Nondurable goods	9,399
Food and kindred products	2,637
Beverages	390
Tobacco products	271
Textile-mill products	926
Apparel	804
Leather and products	242
Paper and allied products	485
Printing and publishing	600
Chemicals and allied products	1,104
Petroleum and coal products	1,436
Rubber products	265

## Book Value of Manufacturers' Inventories Seasonally Adjusted (Millions of Dollars)

All Manufacturing	29,035
Durable goods	13,422
Iron and steel	2,975
Nonferrous metals	948
Electrical machinery	1,524
General machinery (exc. elec.)	3,124
Motor vehicles & equipment	1,771
Transportation equip. (except motor vehicles)	730
Lumber and timber products	585
Furniture & finished lumber products	607
Stone, clay & glass products	522
Nondurable goods	15,614
Food and kindred products	2,861
Beverages	998
Tobacco products	1,514
Textile-mill products	1,988
Apparel	1,282
Leather and products	522
Paper and allied products	704
Printing and publishing	595
Chemicals and allied products	2,032
Petroleum and coal products	2,161
Rubber products	524

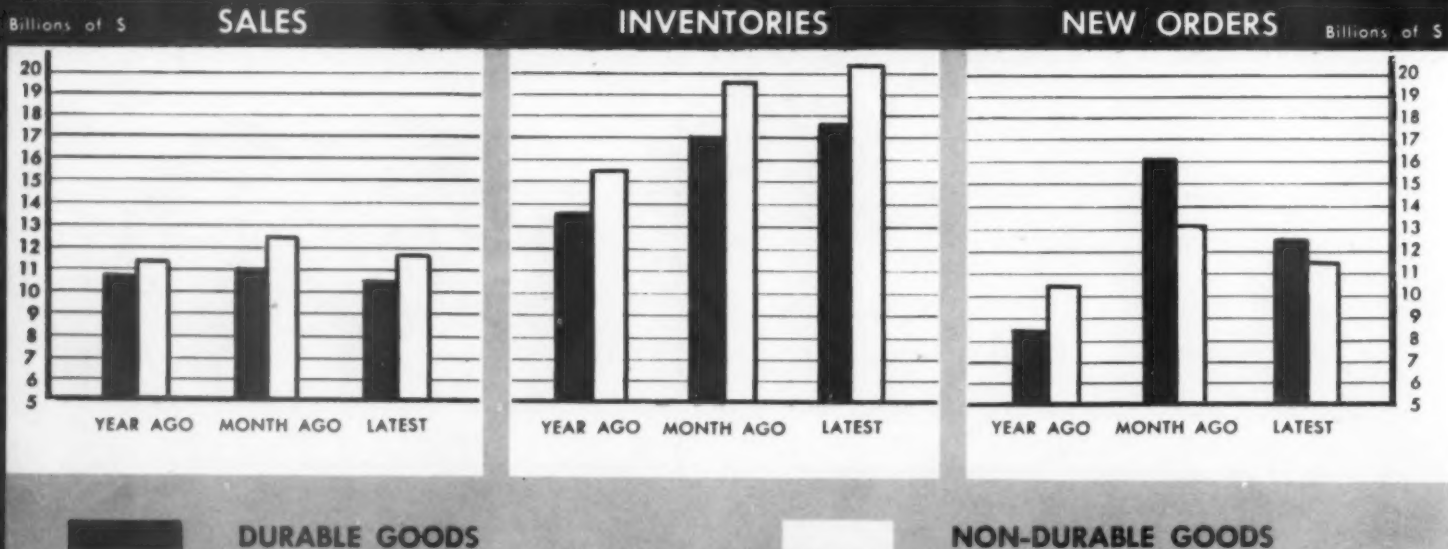
## Manufacturers' New Orders (Unadjusted)

All Manufacturing	17,032
Durable Goods	7,479
Non-Durable Goods	9,553

	1950				1951	
	January	February	November	December	March	April
All Manufacturing	16,216	16,877	21,112	21,284	23,400*	22,300*
Durable goods	6,817	7,103	9,730	9,794	11,000*	10,500*
Iron and Steel	1,718	1,801	2,448	2,591		
Nonferrous metals	440	461	610	630		
Electrical machinery	738	745	1,108	1,096		
General machinery (exc. elec.)	1,085	1,115	1,544	1,579		
Motor vehicles & equipment	1,220	1,211	1,501	1,514		
Transportation equipment (exc. motor vehicles)	284	350	402	396		
Lumber and timber products	359	408	683	640		
Furniture & finished lumber products	290	310	449	403		
Stone, clay & glass products	380	393	566	519		
Nondurable goods	9,399	9,744	11,382	11,490	12,400*	11,800*
Food and kindred products	2,637	2,772	2,949	3,147		
Beverages	390	393	390	468		
Tobacco products	271	263	282	270		
Textile-mill products	926	956	1,290	1,264		
Apparel	804	835	839	778		
Leather and products	242	273	287	270		
Paper and allied products	485	495	668	667		
Printing and publishing	600	654	576	585		
Chemicals and allied products	1,104	1,130	1,529	1,512		
Petroleum and coal products	1,436	1,479	1,870	1,827		
Rubber products	265	273	397	424		
All Manufacturing	29,035	28,990	33,007	34,061	36,400*	37,700*
Durable goods	13,422	13,477	15,119	15,782	17,000*	17,600*
Iron and steel	2,975	2,955	3,404	3,431		
Nonferrous metals	948	956	992	1,030		
Electrical machinery	1,524	1,550	1,751	1,902		
General machinery (exc. elec.)	3,124	3,145	3,519	3,678		
Motor vehicles & equipment	1,771	1,781	2,111	2,191		
Transportation equip. (except motor vehicles)	730	705	754	835		
Lumber and timber products	585	590	583	628		
Furniture & finished lumber products	607	628	729	764		
Stone, clay & glass products	522	523	550	581		
Nondurable goods	15,614	15,513	17,887	18,279	19,400*	20,200*
Food and kindred products	2,861	2,851	3,190	3,285		
Beverages	998	1,013	1,145	1,130		
Tobacco products	1,514	1,480	1,717	1,718		
Textile-mill products	1,988	2,010	2,768	2,838		
Apparel	1,282	1,282	1,647	1,808		
Leather and products	522	501	608	601		
Paper and allied products	704	701	699	734		
Printing and publishing	595	581	651	659		
Chemicals and allied products	2,032	2,022	2,267	2,327		
Petroleum and coal products	2,161	2,123	2,180	2,169		
Rubber products	524	526	564	549		
All Manufacturing	17,032	16,861	22,371	23,160	29,157	23,800*
Durable Goods	7,479	7,213	10,621	11,379	16,014	12,500*
Non-Durable Goods	9,553	9,648	11,750	11,781	13,143	11,300*

\*Estimated n.a. — not available

## SALES, INVENTORIES AND NEW ORDERS



## PRODUCT DELIVERY INFORMATION

**C**HANGES in this month's report are mixed with the longer delivery trend predominating. Slight improvements are shown for protective coatings, motors and rubber products. Delivery times have lengthened for metal boxes, bolts and screws, portable electric tools, taps and dies and wire rope. A large number of manufacturers in other categories indicated that the times shown for their products have remained unchanged since the last report.

Caution against interpreting estimated delivery times too rigidly is again voiced by several suppliers. A typical letter from a maker of steel products states: "The classifications are as nearly correct as circumstances permit us to estimate. In matters like these, with the supply picture changing almost daily, it is very difficult to give a really accurate figure on delivery dates. However, for all practical purposes, these are quite close enough."

Among the products added to the list are: needle bearings, electronic tubes, geared motors and variable speed drives, and solid steel rivets.

Delivery time indicated in the report is based on information received from several manufacturers of identical products, and the time shown is the range of delivery time reported by them. It should be borne in mind that a DO rating is not assurance of prompt delivery, nor an immediate source of supply.

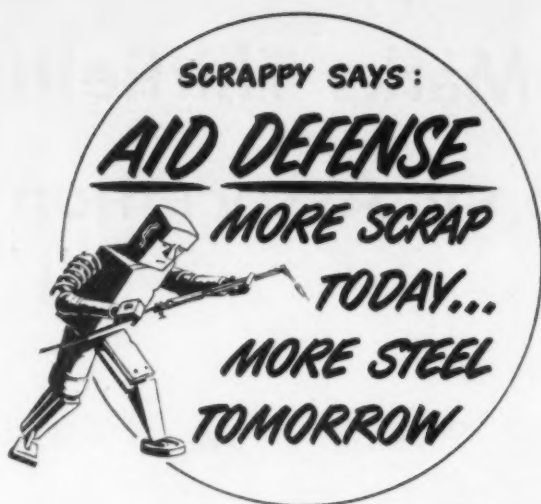
	STANDARD Products	SPECIAL Products	D.O. Orders
<b>ABRASIVES</b>			
Grinding wheels, bonded products	Stock	10 wks	8 wks
Abrasive grain	Stock		
<b>ALLOYS, STEEL</b>			
HR alloy bars	21 wks	21 wks	21 wks
CD alloy bars	26 wks	26 wks	26 wks
Carbon tube rounds	30 wks	30 wks	30 wks
<b>BEARINGS</b>			
Ball Bearings	12-20 wks	24-26 wks	
Needle Bearings	10-18 wks	14-24 wks	8-24 wks
<b>BOXES</b>			
Folding (no printing)		6 wks	3 wks
Folding — printed	4 wks	6 wks	3 wks
Bakery boxes	4 wks	6 wks	3 wks
Folding cartons		6 wks	4 wks
Candy boxes	4 wks	8 wks	4 wks
Metal Boxes (Spare parts)	4 wks		3 wks
<b>BRASS</b>			
Sheet	Indefinite		6-11 wks
Rod	Indefinite		6-11 wks
Wire	Indefinite		6-11 wks
<b>BRUSHES</b>			
Industrial floor brushes	5 wks		3 wks
<b>BUSHINGS</b>			
Bronze	22 wks		
<b>CASTERS</b>			
Castors and Wheels	4-12 wks	4-16 wks	3-8 wks
<b>CASTINGS</b>			
Iron	9 wks		
Aluminum	9 wks		

	STANDARD Products	SPECIAL Products	D.O. Orders
<b>CHAIN</b>			
Hardware	7 wks	7 wks	Prompt
Tire	3 wks	3 wks	Prompt
Roller	Stk to 24 wks	12-36 wks	Stk to 12 wks
Steel	10 to 12 wks		8 to 10 wks
<b>COATINGS</b>			
Protective Coatings	2-8 wks	4-8 wks	1 wk
<b>CONTAINERS</b>			
Containers (Can Co.)	3-4 wks	9 wks	
Stampings (Can Co.)	6 wks	9 wks	2-3 wks
Misc. (Can Co.)	2-4 wks		3-4 wks
Wood cleated fibre shooks		4 wks	4 wks
Food pails, wire handles	4 wks	6 wks	3 wks
Wooden boxes		6 wks	4 wks
Wooden box shooks		6 wks	4 wks
Corrugated cans	16-20 wks		7-9 wks
Cylindrical Paper Tubes & Containers		3-4 wks	
Wirebound Boxes & Crates	2-3 wks (during July & Aug.)		
<b>CRANES</b>			
Traveling lift	38-40 wks	28-30 wks	28-30 wks
<b>DIE CASTINGS</b>			
Zinc		9 wks	4 wks
Aluminum		9 wks	4 wks
Tools, Dies, etc.		18 wks	9 wks
<b>ELECTRICAL</b>			
Motors	8-26 wks	17 wks	4 wks
Geared motors	Stock	4-8 wks	
Variable speed drives	3 wks		
Rigid Conduit	30 wks		4 wks
ABC Cable (BX)	39 wks	6 wks	4 wks
Loomwire	17 wks		4 wks
Bldg. wire	26 wks	22 wks	6 wks
Outlet boxes and connectors	22 wks		4 wks
Electrical Motor Controls	44 wks	24 wks	24 wks

# PRODUCT DELIVERY INFORMATION continued

	STANDARD Products	SPECIAL Products	D.O. Orders
<b>ELECTRONIC TUBES</b>			
Receiving types	4-26 wks	Indef.	1-26 wks
Television picture I & T types	1 wk 1-50 wks	50 wks Indef.	1 wk 1-50 wks
<b>ENGINES</b>			
Single cyl. gas. engines	20-30 wks	25-35 wks	15-20 wks
<b>FASTENERS</b>			
Rivets, tubular	8 wks	8-10 wks	4-6 wks
Rivets, split	4 wks	4-6 wks	4 wks
Rivets, Solid Steel	4-35 wks	4-35 wks	4-6 wks
Washers	3 wks	3 wks	2 wks
Lockwashers	2 wks	9 wks	2 wks
Self-locking nuts	4-6 wks	12-20 wks	25-30 wks
Bolts and screws	6-26 wks	10-22 wks	4-14 wks
Machine screw nuts	24-32 wks		
<b>FIBRE PRODUCTS</b>			
Vulcanized, .010-3/32"	26 wks	34 wks	13 wks
Phenol fibre	8-10 wks	10 wks	6 wks
<b>FIRE PROTECTION</b>			
Methyl Chloride	1 wk	2 wks	1 wk
Sulphur Dioxide	1 wk	1 wk	1 wk
Dry Chemical Extinguishers	3 wks	5-9 wks	2 wks
<b>FITTINGS</b>			
Welding Fittings	Stk. to 17 wks	22 wks	Stk. to 17 wks
Flanges	Stk. to 17 wks	22 wks	Stk. to 17 wks
<b>FORGINGS</b>			
Large	6-17 wks	12-26 wks	
<b>FOUNDRY</b>			
Riddles	2 wks	3 wks	2 wks
Sieves, Flour	3 wks	6-8 wks	2-5 wks
<b>GEARS</b>			
CI & CS cut & cast tooth	9 wks		7 wks
<b>HOISTS</b>			
Heavy Lift	20-24 wks	20-24 wks	20-24 wks
Hoists	Stk. to 13 wks	Stk. to 13 wks	Stk. to 13 wks
<b>INSULATION</b>			
Mineral wool	2 wks	4 wks	1 wk
<b>MACHINE TOOLS</b>			
Machine tools	44 wks	56 wks	36 wks
Grinders	9 wks	17 wks	4 wks
<b>PIPE</b>			
Wood lined pipe	3-6 wks		4 wks
Saran lined pipe	6 wks		4 wks
Saran tubing	Stock	4-6 wks	
Saran fittings	Stock	4-6 wks	
<b>PIPE, STAINLESS</b>			
S S and Monel pipe	13 wks		6 wks
S S and Monel fittings	13 wks		6 wks
<b>PIPING, FABRICATED</b>			
Fabricated	13 wks	26 wks	
Up to 500 tons		4 wks	Preference
Up to 300 tons		75 tons per mo	Preference
<b>PULLEYS</b>			
Cast iron	12 wks		9 wks
Welded steel	8 wks		6 wks
<b>PUMPS</b>			
Single Stage 10" & Below	14 wks	22-35 wks	14-35 wks
12"-16"	18-35 wks	27-40 wks	18-40 wks
18" and above	27-45 wks	36-50 wks	22-50 wks
Multistage Standard	18-52 wks	31-52 wks	18-52 wks
Special Multistage	52-65 wks	65-80 wks	52-80 wks
Turbine pumps	3-6 wks	10-12 wks	3-10 wks
Centrifugal:			
Close Coupled	3-4 wks	16-45 wks	3-45 wks
Standard End Suction	10-12 wks	18 wks	10-18 wks
Chemical	12-18 wks	20 wks	12-20 wks
Double Suction to 6"	14 wks	20 wks	14-20 wks
Double Suction 8"-16"	35 wks	40 wks	35-40 wks
Double Suction 18" and Above	35-45 wks	50 wks	35-50 wks

	STANDARD Products	SPECIAL Products	D.O. Orders
<b>PUMPS (Cont.)</b>			
2 to 4 stage Split Case	35-45 wks	50 wks	35-50 wks
Other Split Case	52 wks	60 wks	52-60 wks
Forged Barrel	65 wks	80 wks	65-80 wks
Special & Vertical	52-65 wks	80 wks	52-80 wks
Regenerative Turbine	3-4 wks	10-45 wks	3-45 wks
Process Pumps	30 wks	50 wks	30-50 wks
<b>RUBBER PRODUCTS</b>			
Cellular rubber	4-5 wks	6-8 wks	2 wks
Silicone rubber	4-5 wks	6-7 wks	2-3 wks
Foam latex rubber	3 wks	5-12 wks	2 wks
Rubberized Hair, Wool	3-4 wks	5-6 wks	2 wks
<b>SAWS</b>			
Hack saws	4-17 wks	4-26 wks	2-9 wks
Gas chain saws	3 wks	9 wks	2-3 wks
<b>SCREW MACHINE PRODUCTS</b>			
Screw Machine parts	13 wks		
<b>SHELVING, ETC.</b>			
Steel Shelving	60 wks		15 wks
Steel Lockers	56 wks		12 wks
Steel Shop Equipment	60 wks		8 wks
<b>SPRINGS</b>			
Springs	13 wks	8-10 wks	6-8 wks
Cold rolled spring steel	17 wks		17 wks
<b>SPROCKETS</b>			
Sprockets	Stk to 9 wks	9 wks	Stk to 5 wks
Silent chain	Stk to 9 wks	9 wks	Stk to 6 wks
Woodruff keys	Stock	9 wks	Stk to 9 wks
<b>STEEL</b>			
Bars and billets	15-26 wks		
Plates and sheets	15-21 wks		
Nails	13 wks	13 wks	7 wks
Fence	13 wks	13 wks	7 wks
Barb wire	13 wks	13 wks	7 wks
Steel posts	13 wks	13 wks	7 wks
<b>TOOLS</b>			
Portable electric	2-36 wks	17 wks to indef.	2-25 wks
Flex. shaft equipment	4 wks	26 wks	4-6 wks
Hand measuring	4-17 wks	4-26 wks	2-9 wks
Precision instruments	4-17 wks	4-26 wks	2-9 wks
Dial gages	4-17 wks	4-26 wks	2-9 wks
Pliers	26 wks		17 wks
Wrenches	26 wks		17 wks
Taps and dies	Stk to 4 wks	6-12 wks	4-6 wks
<b>TRUCKS</b>			
Fork	12 wks	16 wks	8 wks
Elec. lift trucks	12 wks	16 wks	8 wks
Hand lift	4 wks	10 wks	3 wks
Hand trucks	2-12 wks		1-12 wks
Trailers	10 wks		6 wks
Ind. wheels (Rubber)	12 wks	14 wks	6-12 wks
<b>TIRES AND TUBES</b>			
Industrial	2 wks	4 wks	2 wks
<b>TUBING</b>			
Welded steel	13 wks		9 wks
Welded Stainless	26 wks		9 wks
<b>VALVES</b>			
Brass valves	9-24 wks		10 wks
Iron valves	9-36 wks	(according to size)	10 wks
Cast steel valves	15-36 wks		
Stainless steel valves	15-36 wks	dependent on availability of materials	
<b>WIRE PRODUCTS</b>			
Music spring wire	8 wks	12 wks	6 wks
M.B. spring wire	26 wks		6 wks
H.C. rope wire			9 wks
Brush wire	9 wks	13 wks	6 wks
Industrial wire cloth	4 wks	9-10 wks	9 wks
Fabricated WC products		10 wks	6 wks
<b>WIRE ROPE &amp; CABLES</b>			
Wire rope	2 wks	11 wks	13-16 wks
Elec. wire and cable	4 wks	13 wks	13 wks
Aircraft cord	4 wks	9 wks	4-9 wks
Aircraft cable wire	13 wks	22 wks	9 wks



## Get in the Scrap!

Want more steel? Your chances will be better if you help by getting scrap back to the mills

**W**E'RE all in the scrap business now, warns R. W. Wolcott, Chairman of the Committee on Scrap Iron and Steel, American Iron and Steel Institute. He cites the story of the hair curler manufacturer during the last depression, who needed help desperately and went to his banker with a very downcast face. "I am not here to ask you for any more help," he told the banker. "I just want to give you something—my sincerest sympathy. For you are now in the hair curler business."

Today, every one who is concerned with the supply of steel, whether as a producer, distributor, buyer, or fabricator, must be concerned with the steel scrap situation. For in order to get the increased production of steel that every one is asking for, we must bend every effort to find greatly enlarged scrap supplies and channel them back to the mills promptly.

Inventories of heavy iron and steel scrap at the nation's steel plants and foundries are reported as being dangerously low—in some cases down to a few weeks' or even days' supply, as compared with normal, safe working inventories of about 60 days.

More than 1½ billion tons of steel are now in use in the United States. Normally, millions of tons of this steel are discarded each year and find their way back to the mills as scrap to be re-worked into new production.

During World War II, however, between 110 and 120 million tons of steel were shipped overseas. Very little of the amount which has become scrap has been returned to



**TWO IMPORTANT SOURCES OF SCRAP:** a regular program for prompt handling of production scrap off the machines, and an intensive drive to locate and dispose of idle and obsolete equipment.

this country. Meanwhile, demand has soared. Steel production in 1951 has been rolling along at an unprecedented rate of more than 104 million tons a year, or about 10 million tons above the peak output during World War II. These factors have combined to disrupt temporarily the scrap cycle—steel from mill to product and back to mill again.

Purchasing agents are doubly concerned in this situation. They are the ones upon whom the responsibility rests for procuring ever increasing tonnages to meet the demands of production requirements. In the majority of companies, they also have the responsibility for scrap disposal. Thus they are in a position to help themselves as they help the national situation.

The common sense of prompt handling and return of production scrap is obvious. But more than this is needed. We must scour our plants to tap the reservoir of obsolete and idle equipment and other sources of dormant scrap and put it to work in new steel production.

Mr. Wolcott cites an example from the last war. Eastman Kodak Company would not normally be considered a prime producer of scrap. During one of its scrap drives, however, Eastman found 88 carloads of dormant scrap around its plants within a 3-month period. Since that experience, the company has instituted an alert procedure of removing obsolete equipment from its inventory on a regular basis.

Maybe there's a carload around your plant. Even a ton will help.

# Detroit Conference Marks Thirtieth the National Association



**Jamie R. Anthony**  
Georgia Institute of Technology  
President, NAEB  
1951-1952



**EXECUTIVE COMMITTEE, NAEB**

Seated: Kermit Jacobson, Cal Tech; Rev. J. Leo Sullivan, Holy Cross, Past President; Jack B. Rork, University of Denver.

Standing: Bert C. Ahrens, Executive Secretary; Forrest L. Abbott, Teachers College, Columbia University; Jamie R. Anthony, Georgia Tech, President-elect.

**W**ITH emphasis on the problems of procurement during a period of defense mobilization, members of the National Association of Educational Buyers held their 30th annual convention in May at the Statler Hotel in Detroit. A total of 278 members and guests attended, representing 202 educational institutions.

During various discussions on purchasing problems, it was obvious that university and college procurement is being affected by the shortages of materials in much the same manner as industrial purchasing. While educational buyers do not purchase large tonnages of strategic materials, many schools throughout the country are in the midst of expansion programs, or have plans for construction, and the shortages of structural steel and non-ferrous building hardware pre-

sent problems to the PAs in these universities and schools.

Another problem which educational buyers have encountered has been in obtaining relatively small quantities of strategic materials for laboratory purposes. Example is the small quantity of laboratory nickel, or other alloying metals, which is required by some university laboratories for carrying on their experimental projects.

Laboratory equipment presents another shortage problem. The various items of equipment, furnishings, and expendable supplies purchased by educational buyers make up a large total in the case of individual institutions, and the aggregate purchase volume of schools and colleges comes to a very considerable figure.

Highlighting the volume of purchase items by educational institu-

tions was the statement that exclusive of construction, the purchased items at Yale University approximate an annual expenditure of \$4½ million.

The convention program began on the afternoon of Wednesday, May 2, with the annual business officers' conference. F. Morris Cochran, Vice President of the association and business manager of Brown University, presided at this session. Theodore O. Yntema, Vice President in charge of finance of Ford Motor Company, described "Important Changes in the Economy".

A discussion clinic on small college business systems was conducted by Charles O. Pierpont, business manager, University of Redlands, Redlands, Calif.; William H. Hope, Jr., assistant business manager, Winthrop College.

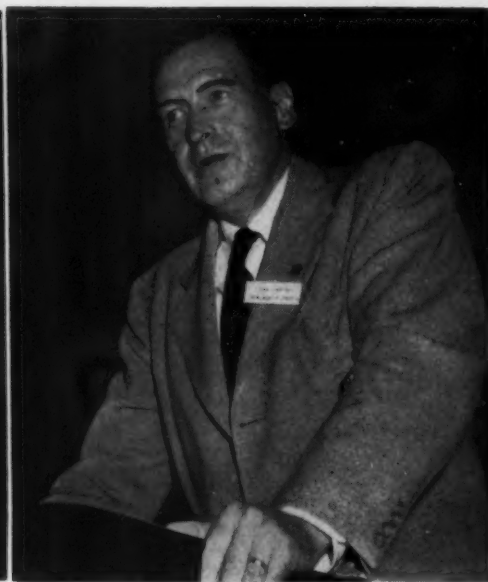
# Anniversary of of Educational Buyers

... By A. N. Weckslar



**LISTEN AND LEARN**

Convention speaker holds the rapt attention of J. E. Doxey and G. C. Henrickson, Duke University; Harry W. Sevink, Virginia Polytechnic Institute; and George W. Warren, University of Virginia.



**George E. Van Dyke**

of the U. S. Office of Education explained how the government can aid college purchasing agents in obtaining their requirements of scarce materials subject to allocation controls.

Rock Hill, S. C.; and Bruce J. Partridge, business manager, Cazenovia Junior College, Cazenovia, N. Y.

During the evening of May 2, the convention delegates gathered at Rackham Memorial Building for the traditional warmup party. The party, which included dinner and entertainment, was arranged by the Michigan hosts for the convention. The host committee included Ray E. Amerman, Wayne University, general chairman, with Paul Friedrich, Cranbrook Schools, as co-chairman.

First general session of the convention on May 3 was under the chairmanship of The Rev. J. Leo Sullivan, S.J., retiring president of NAEB, who is Director of Purchases, College of the Holy Cross, Worcester, Mass.

Chester F. Ogden, Purchasing

Agent of The Detroit Edison Company, Detroit, Mich., spoke on "Purchasing as a Profession", pointing out that there has been a rapid emergence of the PA as an important factor in our industrial economy, and that individual buyers must measure up to the reputations and standards which the purchasing profession as a whole has achieved.

A. N. Weckslar, Washington editor of PURCHASING, spoke on "Federal Controls", discussing the impact of materials controls, price controls and production limitations on the function of procurement. He pointed out that in the mobilization process, many additional control actions will be issued by the Government, and that these will have their most immediate impact on the function of purchasing.

Priorities, allocations and price

controls, Weckslar pointed out, create a complex pattern which establish a whole set of new ground rules for purchasing.

These rules do not change the fundamentals of procurement, but they do create new and constantly changing conditions to which the fundamentals must be applied. The speaker stated that it will be the function of purchasing agents to work with the new ground rules—a job that no one particularly likes, but which must be done to achieve success in the mobilization program.

At an afternoon luncheon session, presided over by Kermit A. Jacobson, Purchasing Agent, California Institute of Technology, an address was given on "The Procurement Officer in University Management" by Dr. David D. Henry, president of Wayne University, Detroit, Mich.

Dr. Henry warned convention delegates that the business officer or purchasing agent of an educational institution can become very irritating to the academic personnel when he gives the impression that he regards the professor as an impractical "braintruster" who is kept alive through the indulgence of the practical people in the world.

Following this session, a forum on relationship with the Federal Government was held. Bert C. Ahrens, Executive Secretary of the NAEB and chairman of the NAEB priorities committee, acted as moderator. The three who took part in the forum were PURCHASING's Washington Editor Weckler; Edmond Baxter, Coordinator, Property Utilization Program for Health and Education, Federal Security Agency; and George Van Dyke, Specialist for College Business Management, Division of Higher Education, U. S. Office of Education.

Delegates attending this session asked a number of questions concerning how educational institutions will fare under the Controlled Materials Plan, and which Government agencies will act in the behalf of educational institutions when problems of materials shortage become pressing.

The discussion forum was followed by the annual E. & I. Co-op Program. Henry E. Abbett, Pur-

chasing Agent of Purdue University, Lafayette, Ind., presented the annual report on the E. & I. Co-op.

A commodity discussion was presented by William S. Price, General Manager, E. & I. Cooperative Service.

In addition, a series of section meetings were conducted, with the delegates attending the meeting which held the greatest interest for them. The section meetings were as follows:

**Section 1.** Presiding, Guy M. Brislawn, Purchasing Agent, The State College of Washington, Pullman, Wash.—Transportation Problems.

"Fleet Operations" by L. G. Baker, chief purchasing agent, University of California, Berkeley, California.

"Student Transportation" by D. H. Rariden, Supervisor of Transportation, Purdue University, Lafayette, Ind.

"Parking and Traffic Control" by L. H. Clayton, Purchasing Agent, University of Wisconsin, Madison, Wis.

**Section 2.** Presiding, Robert W. Feyerharm, Secretary-Treasurer, Yankton College, Yankton, S. D.

"Forms and Systems Forum" by J. F. Dunleavy, Purchasing Agent, Catholic University of America, Washington, D. C.

**Section 3.** Presiding, Harold W.

Herman, Managing Editor, *College and University Business*, Chicago, Ill.

"Food Purchasing" by Eldon H. Stevenson, Assistant Purchasing Agent, Chicago Y.M.C.A., Chicago, Ill.

**Section 4.** Presiding, Hanna Gunderman, Bursar, Pennsylvania College for Women, Pittsburgh, Pa.

"Purchase of Dormitory Equipment" by Robert S. Mullen, Purchasing Agent, Harvard University, Cambridge, Mass.

**Section 5.** Presiding, E. W. Martin, Treasurer-Business Manager, Hendrix College, Conway, Ark.

"Investment Counsel" by Gaylord W. Glarner, investment counsel, University of Minnesota, Minneapolis, Minn.

An outstanding feature of the convention was a tour of the Ford plant, where the delegates were guests of the Ford Motor Company.

Following the tour of the Ford plant, a commodity discussion was held during a general session on Friday afternoon. William Jamison, Business Manager, Girard College, Philadelphia, Pa., led the discussion.

Ralph L. Lee, Department of Public Relations, General Motors Corporation, addressed the President's Inaugural Banquet session, speaking on "Purchasing. Man to Man."

#### Ready for the Atomic Age

Margaret S. Vetter, Rochester Institute of Technology, and Florence K. Young, College of Forestry, State University of New York, examine a Geiger counter at the products exhibit.



#### Robert S. Mullen

of Harvard University addressed one of the convention sessions on the purchase of dormitory equipment.



## A Look in the Mirror

**By Chester F. Ogden**

Purchasing Agent, The Detroit Edison Company

Address at the 30th annual convention, National Association of Educational Buyers, Detroit, May, 1951.



**D**URING the past twenty years, purchasing has made great strides toward earning and receiving management recognition as to the importance of its function. Can we, as purchasing agents, afford to sit back and say the job is done? I believe we might now, carefully and profitably, appraise the position of purchasing as a major management function.

We know that the business executive in any field has two primary responsibilities—planning and control. He is responsible for planning, not only for immediate needs, but also for periods far into the future. He must be able to organize and supervise; he gets things done through people.

How good a job have we purchasing agents done in performing this executive responsibility? According to the late Charles H. Fernald, in his book on *Salesmanship*, we failed miserably. He stated:

"Generally speaking, they (purchasing agents) perform only the clerical function of buying those goods they have been instructed to buy at the best possible prices. The

average purchasing agent seldom has authority to buy anything on his own initiative; when something is presented to him that looks like a good thing, he has to get permission from one of his supervisors before he can purchase it. Salesmen have probably wasted more time in trying to sell the purchasing agent than in approaching any other group of buyers, simply because he does not have the authority to buy."

Whether this passage is true or false, it is as damning an indictment of any management group as I have ever seen. It's high time that each of us sit back and ask ourselves, "Does Professor Fernald's description fit the facts of my own operation? If it does, I'd better get to work to do something about it. If not, let's correct a wrong impression."

We purchasing agents all know the vital role which purchasing plays in the success or failure of American business. Even in the best of times, no manufacturer can hope to prosper under our competitive profit system unless he keeps a tight rein on costs. The importance of purchasing is emphasized when we realize that purchased materials and services represent, on the average, 56% of the total product selling cost of American manufacturing companies. It doesn't take a mathematical genius to see that, if a company is earning 5% net on its sales dollar, a 10% drop in the efficiency of a purchasing department will more than wipe out its entire profit.

There can be no doubt of the necessity for efficient purchasing in today's economy. The point has

been well put by Clifford Hood, Executive Vice President of the U. S. Steel Company, who recently said: "Whether or not a company operates with the proper degree of financial success—whether or not it can set its own process at a proper level—depends to a large extent on the purchasing agent's ability to buy the necessary goods and services at the right price."

What can we, as purchasing agents, do in appraising our own individual situation to see how well Professor Fernald's description fits us, or how well we live up to Mr. Hood's challenge?

A first step, if we haven't already done it, is to put down on paper the proper functioning of our department. By this I mean, first, an organization chart of reporting responsibility. Second, a definition of the area of responsibility and authority of each of the buying jobs. Third, a statement of the policies, practices, and routines to be followed in carrying out the purchasing function.

In doing this we must keep our sights high, and we must keep clearly in mind that each department of every business has the same objective. That objective must be to strengthen the operations of the company. When this job is done, we must make a careful analysis of the "ultimate" in operation as compared to our actual practices.

If we find that we have an order placing department, with careful follow-up on deliveries and a little price haggling thrown in, it's a cinch that we have some real work cut out for ourselves.

If we find ourselves and our departments lacking, there is no one best formula to correct the situation, because conditions and operations vary with every company. However, there are some fundamentals which must be followed.

The first requisite is that to have a successful operation, we must have competent personnel. Each of us must take a look to see what we are doing to assure our companies that we have proper procurement talent now and will continue to have for years ahead. We must analyze what we need to do the job.

What are the qualifications for a buyer? To do a successful buying job, a man must thoroughly understand and know the material he is buying. Therefore we must select men who have this general background knowledge. For instance, if we buy a technical, engineering type of material, it is probably easiest to start with an engineer and train him in the other requirements that we have. With this basic background, what are some of the other characteristics that we require? First, of course, the man must have brains. However, brains alone are not enough; we have had a number of instances of engineering Phi Beta Kappas who have failed to make the grade as buyers. Therefore, certain other qualifications are needed.

The industrial buyer must be able to carry on many tasks simultaneously. He cannot be the research type of individual who starts a project and follows it through to completion without interruption. He must have a keen, quick mind and be able to allocate his time so that he spends it in the most productive manner. He must also have an inquisitive mind and always be asking, "Why are things done in this manner? Is there not a better or less expensive way?" He must have a sense of—and a liking for—economics, because much of his success will depend upon how well he is able to interpret and predict market trends. Probably the most basic requirement is that he be able to meet people and to work with them harmoniously.

After we have selected men who meet our requirements, our job has just begun. Our next task is to teach them how to do their present job—not just well enough to get along, but so that they can excel in it. Just as importantly, we must prepare them for better jobs.

Again, there is no one specific training program which will fit all of our needs. The important thing is that we, as purchasing people,

have a definitely formulated plan which has been clearly thought through and which we follow to be sure that it is effective. This plan will of necessity cover an introduction to our company, an explanation of our department procedures, and require the teaching of the mechanics of a specific job. However, this isn't enough. A good program must also include training in the "art of buying," the engineering and commercial aspects of commodities, business ethics, procedural tools, and human relations.

The task of training in human relations leads to a broad look at the subject, which is one of the most important aspects of our job. Only if we know how to deal with people, the salesmen who call, the men in our using departments, and the employes who work for us, can we hope to do a successful job. It is difficult to train people in how to deal with others. Apparently some people are born with the understanding and others have great difficulty in developing it. There are, however, two principles which would make all of our dealings much easier.

### Two Principles Helpful

The first is that, "everybody likes to feel like somebody, and nobody likes to feel like nobody." If we remember this, we'll be hesitant to criticize an employe or a salesman in front of others. If corrective measures are necessary, we'll do it privately. Similarly, we'll be sure to tell our employes and our salesmen of good jobs they have done. We will do this complimenting, whenever possible, in front of others.

The second principle is that "any action begets a like action." This is merely a restatement of the Golden Rule, but most of us are too often prone to forget it. The proof of its truth is readily evident, though, when you think of your reaction if you are standing in line and somebody jostles you. If the person immediately turns and says he is sorry, your anger quickly cools. But if he is belligerent, you too are practically ready to fight.

I realize that these two principles won't make us human relations experts, but they may serve to call to mind the importance of having purchasing men know how to deal properly with people.

In our general appraisal of our purchasing function, another factor we should look at is how well we are selling the importance of the function to top management. You might reasonably ask what a pur-

chasing agent can do to accomplish this. First, the purchasing agent must sell himself on the importance of his job. He must realize that his is not an order placing function, but rather that he is a real part of the management team. This means that he will have to spend extra hours to keep himself informed and to make the thorough investigations that are necessary to do a top-flight job. After he has sold himself, he must sell the people who work for him. He's got to show these people about savings that can be effected by an inquisitive mind, making cost analyses, market surveys, and using the other tools that make a purchasing agent out of a routine buyer.

His next job is to sell the purchasing department to the departments with which he works. Again, this can best be done by giving service and making the jobs of those departments easier. There isn't a production man alive who wouldn't like to reduce costs, and if the purchasing department can come up with a worthwhile suggestion—either through a new material or a new method—the production man will be sold.

Another tool that the purchasing agent can use in selling top management is making use of adequate reports on the activities of the department. These reports, again, will vary with each company, but they must show real savings that have been effected through efficient buying. They must be more than statistical in nature. They must also cover the unusual and interesting activities.

Summarizing, the purchasing agent will sell his department to top management if he does these things:

1. Sells himself on the importance of his job.
2. Sells his employes on their responsibilities for doing a good job.
3. Sells the using departments on the economies that the purchasing department can effect for them.
4. Makes adequate and convincing reports to management.

It's time for us to take that critical look at our own status to see whether we are performing as responsible executives or are functioning as clerks. Obviously, we can't be both.

Benjamin Franklin once said: "The buyer needs a hundred eyes where the seller needs but one." This certainly applies to present day industrial purchasing. Let's use at least one of those eyes to look in the mirror and review our own situation. If our review shows that we are lacking, let's start at once to correct the situation.

## FORMS CONTROL for Purchasing Agents

By **J. F. Dunleavy**, Purchasing Agent, Catholic University, Washington, D. C.

Abstract of an address at the 30th annual convention of the National Association of Educational Buyers, Detroit, May 4, 1951

**F**ORMS are something more than printed or typed documents with blank spaces for the insertion of information. They are pieces of paper predesigned to facilitate work. More specifically, they are devices by which management seeks uniformity and simplicity in the recording, transmitting, and reporting of its operations.

I wonder if you realize just how big this forms business is. In one recent year, excluding all the countless mimeographed or dittoed forms, forms production accounted for two-thirds of the total cost of printing in the Federal Government—roughly \$200 million out of approximately \$300 million. The overall expenditure for forms the country over is, of course, many times that figure.

But the cost of producing forms is distinctly secondary compared with the less calculable cost factors of personnel, time, procedural efficiency, public relations, and general operating effectiveness influenced by the use of forms. It is generally recognized that the cost of a business record is anywhere from 25 to 50 times the cost of the form itself. Management faces a major problem in the development of a mechanism for the regular review and control of procedures as well as assuring economy in the design, production, and use of the forms themselves.

Frank Knox, who was chairman of the Forms Control Program for the Navy during the last year, stated that "Forms control is a plan or method whereby management guides and regulates clerical operations by controlling paper work." When you approve a form and cause it to be printed, that is not an end product. It implies a reason for requiring or requesting information, and suggests the conveyance of that information to some person or persons for some purpose. Forms function as the intelligence system for control of every administrative activity. Forms represent written orders and instructions issued from control points to start and guide physical activities. Forms therefore should be motivating forces, not mere historical records. However important the physical standardization and simplification of forms may be, and however much you may be able thereby to reduce the mere cost of printing the forms themselves, the way to realize the greatest potential savings with forms is to analyze and improve them functionally.

In such an analysis, you will evaluate the form on a two-fold basis. First, what utility does the form possess in respect to more efficient preparation of the completed record, in the sense of its having been written, distributed, referred to, and destroyed or filed because its work is finished? In other words,



**Russell H. Groh**

Yale University P. A. scored a hit in a dramatic sketch presented before an appreciative audience at the closing session of the NAEB conference, demonstrating some of the headaches that beset today's buyer.

how much does the form facilitate any paperwork connected with it?

The second question is usually even more important. Does the form, as prepared, distributed, routed, interpreted, adequately guide, check, regulate—in other words, does it control—the administrative operation in question? For instance, does it serve to get production promptly and at minimum cost in man-hours and avoid delays?

## NOTES ON DESIGNING FORMS FOR EFFICIENCY AND ECONOMY

1. Prepare your form with a view to getting a job done promptly, at a minimum cost in man-hours and with a maximum of service, accuracy, and utility in terms of completed transactions and records.
2. Check and study all other forms having any bearing on the form under consideration. Be sure that they tie in, and that there is no duplication. Possibly two or three like forms can be combined into one.
3. The heading should clearly state the purpose of the form.
4. Form should be of a size suitable for the filing system in all offices where it is to be used. Should it match other documents in size?
5. If your form is a snap-out carbon, you will find considerable money saving by using the standard sizes and standard colors provided by this specialized industry.
6. Is color printing really necessary? Does the form require numbering? What about paper stock?
7. Have the order number, department, budget number, or whatever is the most important identifying symbol, printed in the most conspicuous place on the form—usually the upper right hand corner.
8. Keep the form as simple as possible. Make sure it covers all the essential points for which it is intended, but no more. Make sure there are enough copies for all concerned. If the form is a complex one, perhaps it will be necessary to incorporate instructions for completing.
9. If the form is normally completed by typewriting, make certain that lines are arranged with standard typewriter spacing and for the most convenient use of the typist. For example, if you are typing a purchase order from a requisition, try to arrange the purchase order so that the information is substantially in the same position as on the requisition, or at least in the same sequence. If the form is to be completed in writing, double spacing should be used.
10. Preprint all recurring information, but avoid printing items which are subject to change.
11. Take the proposed form to everybody connected with its use and get their reaction. See how it works in with their particular operation. You may be surprised how a form which is your idea of perfection may raise havoc with some one at the other end.
12. Now that you are convinced that the form is necessary, and that it provides the desired end results, let it sit on your desk for a week or ten days. This is the cooling off period. During this period you will perhaps make a half dozen changes and thank heaven you did not go ahead with it as originally planned.

Does it serve the departments, administrative personnel, executives and management as promptly and economically as possible?

Insofar as we purchasing agents are involved in the designing of forms, we must be considered to

that extent as management officers. To be a management officer worthy of the name, you should get away from the query, "How much does this form cost to print?" You should learn that an improperly designed form which costs a penny to pro-

duce may require as much as a dollar of employee labor to fill in, whereas a scientifically drafted form, produced at a cost of six cents, may be processed for only 50 cents. About 70% of your clerical payroll is spent for reading, writing, extending, handling, transferring, referring to, and filing pieces of paper. What you spend for business forms, or rather what you get in a form for your money, affects—favorably or unfavorably—this whole paperwork activity. The better a form is functionally, the less will be the cost of your completed records.

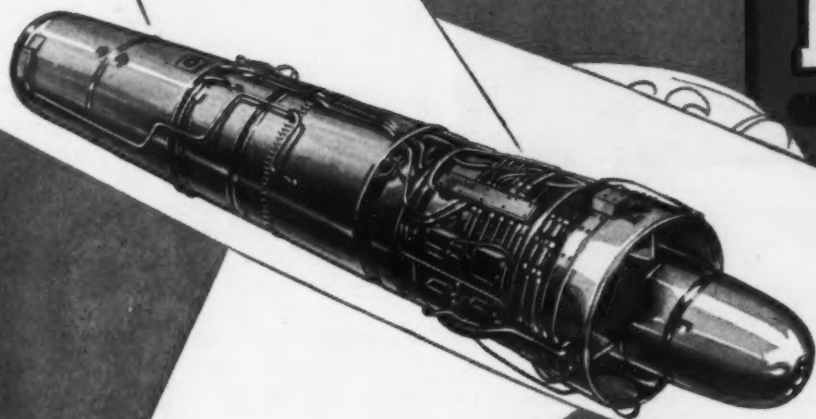
It is authoritatively estimated that some \$100 million annually could be saved by a careful study of forms presently in use. In many institutions and corporations, committees have been appointed specifically for the purpose of analyzing and studying forms, and to make recommendations regarding control, essentiality, design, standardization, duplication, and simplification.

A while back, I read in *PURCHASING* Magazine that the U. S. Treasury Department had established a new "Forms Analysis and Advisory Section" whose function it was to study some 5,000 forms used in that department; savings brought about by the first three months work of this section more than justified its operation for the entire year. During its study, this committee came up with some interesting data on savings in private industry as well. A major railroad saved \$150,000 in one year through standardization of forms; an electrical manufacturer effected savings of \$130,000 annually after finding that 400 of its forms could be combined with others; a New York bank found that of 1,500 forms studied, 700 were totally unnecessary; a large chemical company saved \$55,000 by standardizing on type, paper stock, and color, \$60,000 by collective printing, and \$54,000 by revising purchasing methods.

In my own office last year, when I was short of clerical services for several months, I developed form letters and postcards to the point where I could answer the greater part of correspondence merely by signing my name to a suitable form. Now let me tell you how wasteful I was during this brief period. First of all I drafted two letters, one dealing with follow-up on deliveries, invoices, etc., and the other authorizing price changes, etc. I promptly had a good quantity of each printed. A few weeks later I thought how

*Another First for...*

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ALLOY STEELS



The use of N-A-X ALLOY STEEL in Aircraft Gas Turbines saves up to 50 per cent of critical Stainless Steel.

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with use of N-A-X ALLOY STEELS**

With the demand for greatly increased quantities of the critical and strategic Stainless Steels used in Jet Engines intensified by the acceleration of the building program, the Air Force requested the producers of these engines to seek *suitable* material with less critical alloy content to replace the Stainless Steel for certain moderate temperature application in these aircraft gas turbines.

The steel selected had to be of low-alloy content with high strength and good welding characteristics. Ordinary low carbon steel did not meet the requirements because of its low tensile properties and the fact that it could not be satisfactorily welded by the inert arc process, which is widely used in aircraft gas turbine manufacture.

The data available from tests made on several weldable low-alloy, high-strength steels indicated that N-A-X ALLOY STEEL was the most satisfactory of the group — *its selection followed*. Unlike other possible substitutes, N-A-X ALLOY STEEL has good low temperature impact values, maintains its higher strength and is not subject to temper brittleness in the wide operating temperature range required of the steel for this purpose — from a low of  $-70^{\circ}\text{F.}$  to  $+800^{\circ}\text{F.}$

The use of N-A-X ALLOY STEEL for this application has cut the amount of Stainless Steel required in half. This is of considerable importance to the Air Force.

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N-A-X Alloy Division

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**NATIONAL STEEL CORPORATION**





#### Coast to Coast

Kermit Jacobson of Cal Tech, conference program chairman, and Rev. J. Leo Sullivan, retiring president of NAEB, compare notes on the highly successful 30th anniversary meeting of the association.

stupid I was to be sending out routine follow-up letters at 3¢ postage when the same thing could be done with penny postcards. After giving the matter brief study, I came up with three different postcards which I thought necessary at the time to replace the form letter. Several months later, when we were running short and had to have the cards reprinted, I developed one new card incorporating all the information previously carried on the three separate cards. Now I think that particular item is straightened out, all of which proves that we give altogether too little thought to the printing of forms.

As to the other letter dealing with price increases, I was making two glaring errors. The first was that the bond paper we used for this form was not only costly, but was too heavy to make copies for everyone concerned with the order; consequently only the vendor and the purchasing department knew whether the increase in price had been authorized. The second error was the matter of encumbrance; these letters were going out without any thought of the accounting department, although where price increases were sizable these were brought to the attention of the budget officer. We have now changed this letter to a "Purchase Order Change Notice" with the same number of copies and the same distribution as the original purchase order. Also, the change notices

are encumbered as are purchase orders. You can readily see how costly this operation turned out to be, yet we seemed to be on the right track all along. I am quite pleased with this form now, except when I stop to think of the trial and error method used to arrive at its final form, to say nothing of the waste of time and material. I do not believe that this is an extraordinary case.

Purchasing department forms are, of course, only one part of a much broader subject. There are many other forms used in the business of education, as in every other business. Our greatest difficulty is in connection with those forms which are used by several of the other departments, each of which has its own ideas on what the form should contain. One example at our school is the matter of Student Bills. This is a one-time carbon form, and must be made up to suit the convenience of the Registrar's office as well as the accounting department. To make things more complicated, we in the purchasing department stock these bills in our normal forms inventory and are responsible for their supply. When our stock gets low, we send a note to the Registrar's office, along with a copy of the form for such changes as they may see fit to make. From here, it is sent to the accounting department for them to revise as necessary. By the time the both decide that the form is properly revised, we are about out

of stock, with registration coming up in a few days, and delivery on one-time carbon forms is about three or four months.

We have a small print shop, with three—sometimes four—employees, which is under the control of the purchasing department. Our equipment consists of two Multigraphs, two Mimeographs, and one Multilith. This shop does only a very small percentage of our printing work, but at least we keep them busy at all times and we operate profitably. We have not made a complete study to determine whether a large shop of our own could be operated satisfactorily and profitably; our off-hand view is that we are better off keeping our small shop busy and sending everything else—especially the complicated work—outside. We use internal supply order forms on the print shop for each and every job; they are priced by the print shop and returned with the completed work to the purchasing department. They are picked up here and delivered to the requisitioning department, where a receipt is signed and returned to the purchasing department.

In conclusion, it takes administrative teamwork to make a forms control program pay the limit in operating dividends. The staff elements must be depended on for knowledge of purpose and application, while staff control should know how to analyze, to define, and to correct. Everybody in the organization, from the top executive down, can help in bettering forms control if they have the know-how that makes the forms control effective.

There are probably as many different approaches to the analysis of a form as there are human beings. However, there are certain fundamental questions, the most important of which is: Does the form help to get the job done promptly, at a minimum cost in man-hours, and with a maximum of service, accuracy, and utility in terms of the completed transaction and record?

We owe much of our progress to man's ability to question intelligently. One of the foremost simplification consultants in the country has boiled down the forms problem to five functional and operational queries:

What is its purpose?  
Where should it be done?  
When should it be done?  
Who should do it?  
How should it be done?



## "Gravy ON YOUR HAIR?"

Just because gravy goes swell over noodles, he shouldn't assume it's good on hair, too!

And just because one bearing is best lubricated by one particular grade of oil, you shouldn't assume that the same oil is best for *all* bearings on that machine. In many cases it isn't.

**OIL CUPS** permit you to lubricate each bearing with the oil best suited to that bearing—thus prolonging bearing life, reducing maintenance costs, cutting down-time, boosting production. And oil cups fortunately *cost very little*.

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## Legal Lessons of 1951

Recent court decisions illustrate important interpretations of laws regarding validity of title to purchased goods and merchandise

By Leo T. Parker

**D**URING the year 1950 the writer made special effort to list, for utilization in this article, the most interesting, informative and outstanding higher court litigations likely to assist purchasers to avoid future expensive law suits, and at the same time win unavoidable suits.

### Validity of Title

First, I shall discuss validity of titles to purchased merchandise as decided by higher courts in 1950. This is an important subject because without a good and legal title money expended for merchandise may be a total financial loss.

Generally speaking, a purchaser may sue the seller and receive back the purchase money if for any reason he cannot obtain a good and valid certificate of title or bill of sale for the merchandise.

For example, in *Wilde v. Liedtke*, 231 S.W. (2d) 1009, it was shown that an automobile dealer sold one Liedtke an automobile. At time of sale the dealer told Liedtke that he would have no trouble with the title. However the motor number of the automobile did not correspond with the motor number in the title certificate and Liedtke returned the automobile to the dealer. Liedtke sued the dealer for the money he had paid for the automobile.

In holding in favor of Liedtke, the higher court said:

"Appellee (Liedtke) testified that the papers which appellant (dealer) gave him showed the 1946 motor

number, hence it was impossible for him to secure a certificate of title."

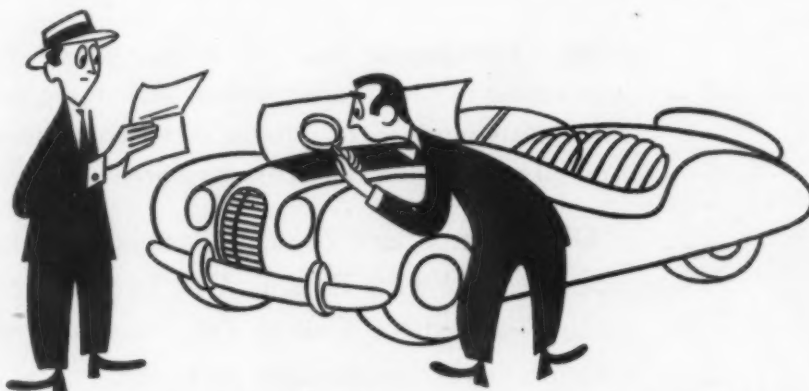
### Title Without Lien

Recently a higher court held that if a seller gives to an installment purchaser a title of certificate or bill of sale without a lien notation, and also gives possession of the merchandise to the purchaser, such a seller forfeits his legal right to regain possession of the merchandise from one to whom the purchaser sells it. This same rule of law is applicable to a finance com-

Corporation. When Gray purchased the equipment from Hope he received immediate possession and a certificate of title thereto, but *no lien* was shown on the certificate of title. Two weeks later Gray sold the equipment to one Davis, who shortly thereafter sold it to Richey.

The General Motors Acceptance Corporation sued Davis for conversion of the equipment, and damages for the amount due under the conditional sales contract.

The higher court held that since Hope had given Gray possession of the equipment and indicia of own-



**MERCHANDISE MUST BE ACCURATELY IDENTIFIED IN THE  
TITLE CERTIFICATE OR BILL OF SALE**

pany who receives assignment of the purchaser's contract and notes.

For illustration, in *General Motors' Acceptance Corporation v. Davis*, 218 Pac. (2d) 181, it was shown that a dealer purchased equipment from the Hope Company under a conditional sales contract which was on the same day assigned to the General Motors Acceptance

ership free and clear of any lien or encumbrance, the General Motors Acceptance Corporation could not recover possession from any innocent buyer who purchased the equipment from Gray, or persons who took legal title after Gray. The court said:

"In the case before us Hope caused to be issued and delivered

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JULY, 1951

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119

to Gray a certificate of title which made no mention of any lien reserved or encumbrance thereon."

### No Title Delivered

Recently a reader asked this question: "If the title certificate to equipment is not delivered by a seller to a purchaser, can the latter resell the equipment and give good title to the last purchaser?" The answer is: All purchasers must at their own peril, ascertain the true ownership of purchased merchandise. In other words, mere possession does *not* warrant an assumption of legal ownership by the possessor.

For example, in *Deahl v. Thomas*, 224 S. W. (2d) 293, it was shown that the owner named Thomas of merchandise, sold it to a purchaser who gave Thomas a draft for \$2,950 on a bank, payable to Thomas. The title or bill of sale was attached to the draft. Before the draft had been paid, or presented for payment, the purchaser sold the merchandise to one Deahl. The draft was twice presented in due course by Thomas to the bank for payment but was never paid because of insufficient funds on deposit by the purchaser. Hence, the purchaser never received the bill of sale attached to the draft.

Thomas sued Deahl for possession of the merchandise. Since neither the purchaser nor Deahl ever received legal title to the automobile, the higher court held that Thomas could recover possession of the merchandise from Deahl. This court said:

"Hicks (dealer) had nothing to show legal title or his right of possession when he sold it to appellant (Deahl). Neither did he give appellant anything to show legal title to or any right of possession by appellant at the time he took possession."

### Two Innocent Persons

Very frequently two innocent and deserving purchasers become involved in litigation. The law is established that the one whose negligence resulted in the controversy must bear the ultimate loss. This is so although both sellers had good intentions throughout the transaction.

For illustration, in *Mygirack v. Lepore*, 69 Atl. (2nd) 772, it was shown that one Lepore purchased a motor vehicle, tires, etc. Under the

designation for liens in the Bill of Sale, the word "None" appeared. Later Lepore sold the vehicle and accessories to one Mygirack. Without the knowledge of either Lepore or Mygirack there existed a chattel mortgage covering the vehicle.

Later the holder of the mortgage repossessed the automobile and accessories from Mygirack. Then Mygirack sued Lepore to recover the money he had paid to the latter.

Although both Lepore and Mygirack were innocent in the matter, the higher court held that Lepore must repay to Mygirack the amount paid because of Lepore's negligence in *not* investigating and learning that the vehicle was mortgaged.

### Buyer Takes Seller's Title

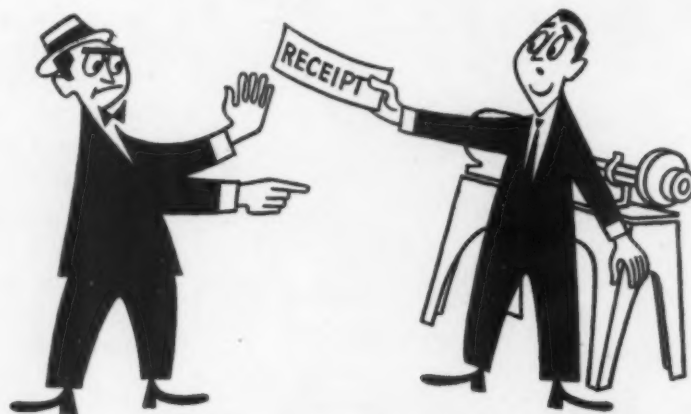
It is well established law, under no circumstances may a buyer take any better title to merchandise that is possessed by the seller. Hence, a seller who has stolen merchandise, or has goods obtained by defective

if the original, or any later purchaser does not receive a good and valid title he cannot give a good title. Under these latter circumstances, of course, the original seller may recover possession of the merchandise from the purchaser who now has its possession, irrespective of reasons.

### Seller Recovers Goods

Still another important point of law is that if one sells merchandise and gives a good and valid assignment to the purchaser who did not deserve a valid title, as where he gave a worthless check for the purchase price, the seller may recover possession of the goods from any and all persons who later purchased the merchandise and did *not* receive a valid certificate of title from his seller.

For example, in *Robinson v. Poole Company*, 232 S.W. (2nd) 807, the testimony showed facts as



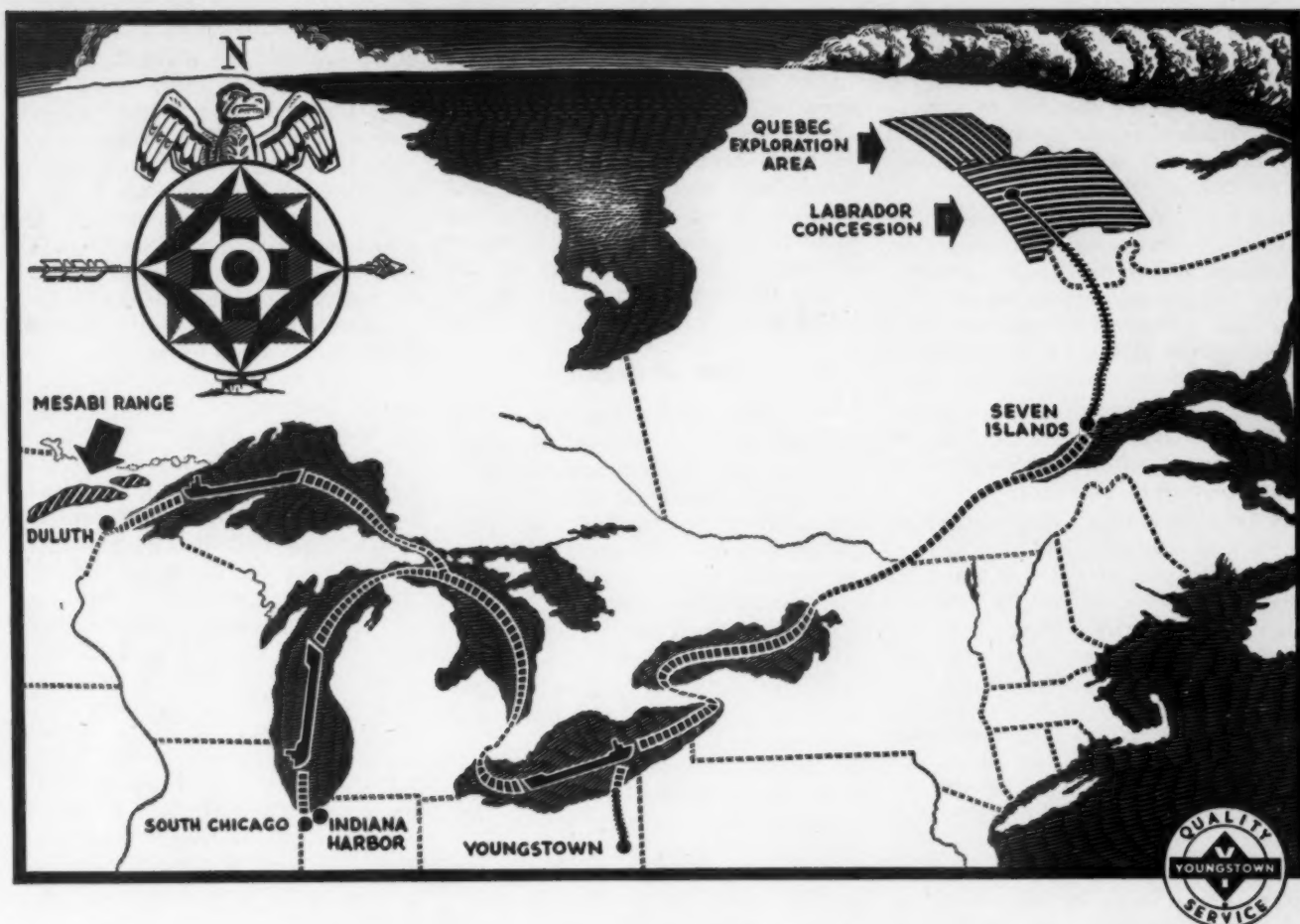
**PROOF OF PAYMENT DOESN'T PROVE OWNERSHIP  
IF SELLER'S TITLE IS INVALID**

title transfer, or has merchandise obtained through unlawful procedure, cannot ordinarily give good and legal title to a purchaser.

On the other hand, the higher courts very consistently hold that if a seller gives a valid certificate of title or bill of sale to the purchaser, the seller has no recourse against purchaser, who in good faith subsequently buys the merchandise. This is so because the last purchaser may receive as good and valid title as possessed and transferred by the original seller, and subsequently transferred by other purchasers. And conversely

follows: A person named Nelson purchased from one Robinson a machine. Robinson delivered the machine to Nelson, who gave Robinson a check for the purchase price in the sum of \$1,575.00. This check eventually proved to be of *no value* because Nelson had no account in the bank on which the check was drawn. The testimony showed that at the time of the purchase Robinson had executed on the bill of sale a good and valid assignment to Nelson.

Later the Poole Company purchased the machine, paying Nelson \$1,100.00 cash. Nelson delivered to



## Mister, can you spare Half a Billion Dollars?

ONE half a billion dollars may seem like pin money compared to the sums mentioned for our national finances.

But it is more than three dollars for each man, woman and child in the United States. It is more than the entire steel industry earned in the "dreadful decade" from 1930 to 1939. It's more than America spent to win two wars--the War of 1812 and the Mexican War, combined.

Approximately one half a billion dollars is the estimated sum that a group of steel and mining companies, one of which is The Youngstown Sheet and Tube Company, is investing to guarantee future iron ore supplies for America. In the Mesabi iron range of Minnesota, development projects are under way which will produce millions of tons of

iron concentrates from taconite. In Labrador and Quebec, a vast deposit of high grade ore is being developed. Plans include building a 360-mile railroad into the wilderness to ore docks on the St. Lawrence River.

Where does this money come from? From an unnoticed addition to our national debt? From "extra nickels" tucked away in the Federal budget? From more taxes levied on every citizen's income? *Certainly not!* Development of these ore reserves will be financed by each participating Company asking its shareholders to share in its tremendous cost.

America, in peace or in war, is served--now--and for generations to come. This is free enterprise. This is the system that created America from a wilderness and is the only sure way to keep it vigorous and strong.



## The Youngstown Sheet and Tube Company

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the Poole Company the machine and the bill of sale which he had obtained from Robinson, but Nelson did not execute the bill of sale to the Poole Company, although he promised that he would return later and execute the bill of sale.

When Robinson learned that Nelson's check was no good, he demanded that the Poole Company give up possession of the machine to him. On refusal Robinson filed suit against the Poole Company to recover possession of the machine.

It is important to know that the higher court ordered the Poole Company to give up possession of the machine to Robinson and said:

"It is conceded that defendant (Poole Company) did not receive any certificate of title assigned to them by Nelson. From this admitted fact it necessarily follows that defendant (Poole Company) had no right or title and, therefore, as between themselves and Nelson did not become 'an innocent purchaser for value'. It follows that the alleged sale to defendant (Poole Company) was fraudulent and void."

Notwithstanding the above explanations of law, the last purchaser always has a good and valid title to purchased merchandise if the

possessor of the merchandise. This is so because through negligence of the original seller and lien holder, innocent buyers were lead to believe the merchandise clear and without encumbrance. On the other hand, as above explained, if the original seller has no good and valid title, as where he sells stolen merchandise, the last purchaser never has good and valid title to the goods.

#### Law of Deceit

It is well established law that a purchaser may recover damages from a seller who practiced deceit or fraud. However, there is no legal deceit or fraud if the complaining party or purchaser had an opportunity to decide for himself whether the seller was practicing deceit, and attempting to defraud him.

For example, in *Coffin v. Dodge*, 76 Atl. (2nd) 541, the testimony showed facts as follows: One Coffin placed an order for a machine with one Goodwin, who was a dealer. While awaiting delivery of the machine from Goodwin another dealer named Dodge came to Coffin and, according to the latter's testimony, induced Coffin to give an order for a similar machine and

"There is no 'clear and convincing proof' that the plaintiff (Coffin) relied upon anything other than that the defendant (Dodge) could get it 'right off' or 'right away'. Where the party has an opportunity to learn the facts he has no right to rely on representations, the truth of which he has equal means of ascertaining or by the exercise of reasonable diligence could have ascertained. The plaintiff (Coffin) lived in the same town with Goodwin and could have easily ascertained the true facts from Goodwin or Goodwin's garage."

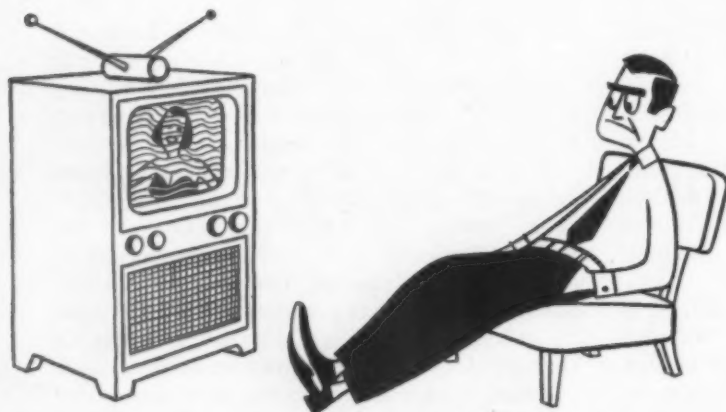
For comparison see the case of *Crossman v. Bacon & Robinson Company*, 109 A. 487. This court clearly explained that a seller never is liable for fraud unless the purchaser proves that the seller made (1) a material representation which was false; (2) and it was made recklessly or a definite assertion of a fact without knowledge of its truth or falsity; (3) and it was made with the intention that it would be acted upon by the purchaser; (4) and the purchaser did not know the statement was false.

Hence, if a purchaser did not rely upon the representations made by a seller, or knew them to be false, or by the exercise of reasonable care could have ascertained their falsity, the seller never is liable for fraud or deceit.

#### Set Not Satisfactory

The courts consistently hold that a seller who breaches or otherwise violates his warranty or guarantee must take back the subject of the sale and refund the full purchase price, plus damages, plus interest.

For example, in *Keeler v. General Products*, 75 Atl. (2nd) 486, the testimony showed that a man named Keeler bought a television set from General Products for \$1,523.25. The purchase was made in reliance upon the assurances of the seller's president and vice-president, and one of the salesmen, that the set would "operate satisfactorily". However, it failed to provide good reception, and General Products replaced it with another model. The same officials of the selling company renewed their assurances of "satisfactory performance" by the substitute. The second set proved to be no better than the first. Then Keeler demanded the return of the purchase price and offered to return the set, which was then in substantially the same condition it was in when delivered.



#### SELLER HAS A WEAK CASE WHEN HE GIVES A POSITIVE GUARANTEE OF SATISFACTION

original seller gave a good and valid title to the original purchaser and subsequent purchasers also issued good and valid titles. For example, if a seller fails to properly record a lien on merchandise or negligently issues a bill of sale or certificate of title *not* having a notation of the lien clearly marked thereon, this seller cannot recover possession of the merchandise from the last purchaser and present

deposit \$200.00 on the promise that he could have delivery of the machine at once. The testimony showed that Coffin did not ask Goodwin whether he could deliver the machine sooner than Dodge. Later, when Dodge failed to make delivery, Coffin sued to recover the \$200.00 deposit, plus damages. The higher court refused to render a judgement in favor of Coffin, and said:



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J.D.



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Although the demand was repeated on numerous occasions, the seller refused to accept the set or to reimburse Keeler. Keeler sued the seller to recover the full purchase price of \$1,523.25 plus legal interest.

The higher court promptly ordered the seller to take back the television set and refund the full

the merchandise delivered under the first contract was inferior quality.

For example, in *Burcham v. Caprio*, 210 Pac. (2d) 877, it was shown that a company purchased a carload of pickles from a packer. Before this carload was delivered the company purchased two more carloads of pickles. Soon after this second contract was signed, the

not as represented by the seller. McCullagh alleged that he was defrauded. However, McCullagh did not ship the equipment to the seller, but sent a letter to the seller rescinding the purchase contract.

In subsequent litigation the higher court held that McCullagh could not recover the \$900.00 down payment, saying:

"Viewed in the light most favorable to the defendant (McCullagh) the testimony does not establish rescission."

For comparison, see *Foster v. Rowley*, 110 Mich. 63. In this case the higher court refused to hold in favor of the purchaser of merchandise where the testimony showed that he continued to use the goods after alleging that the seller practiced fraud. This court said:

"It was the duty of defendant (purchaser) as soon as he learned of the misstatements, to have rescinded the contract; and notice of such rescission must have been promptly given, and adhered to, in order to bind the parties thereto. The continued use of the property for some 30 days after he had learned the facts would be a waiver of the right of rescission, even though notice of such rescission had been given."



#### INFERIOR QUALITY OF INITIAL SHIPMENT JUSTIFIES CANCELLATION OF SUBSEQUENT ORDERS

purchase price. The higher court said:

"Several remedies were available to the plaintiff, (Keeler) upon the breach of warranty. He elected to rescind the sale. When the defendant (General Products) refused to take the set back, the plaintiff (Keeler) held it as bailee and acquired a lien thereon to secure repayment of the purchase price."

This court explained that this seller could have avoided an adverse decision in this litigation by proving that its officers and salesman had merely represented to the purchaser that the television set would operate as satisfactorily as other sets at the same price. However, when officers of the company and the salesman made a positive statement and guaranteed that the set "would be satisfactory", Keeler had a legal right to sue and recover the full purchase price upon proof that the set did not operate satisfactorily to him, or to other reasonably prudent purchasers.

#### Second Order Cancelled

Recently a higher court held that a purchaser may, without any liability, cancel a second contract for merchandise if, after signing the second contract, he discovers that

company's official discovered that the first carload of pickles was of inferior quality, and not "up to the standard" of samples furnished by the seller.

In subsequent litigation the higher court held that the company was justified in refusing to accept delivery of the last two carloads of pickles.

#### Not Lawful Rescission

Considerable discussion has arisen from time to time over the legal question: "What must a purchaser do in order to successfully rescind a purchase contract based on the seller's fraud?" According to a recent higher court the purchaser must immediately redeliver the merchandise to the seller and demand return of the purchase price.

For example, in *McCullagh, Inc., v. Dimitroff Company*, 42 N.W. (2d) 775, the testimony showed these facts: One McCullagh purchased certain equipment from the Dimitroff Company, and paid \$900.00 down, the balance to be paid on monthly installments. A finance company financed the transaction. Two weeks later McCullagh notified the seller that he was rescinding the contract because he had learned that the equipment was

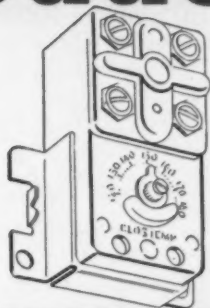
#### Must Be In Writing

Generally speaking, contracts for merchandise exceeding \$500.00 are void, unless in writing.

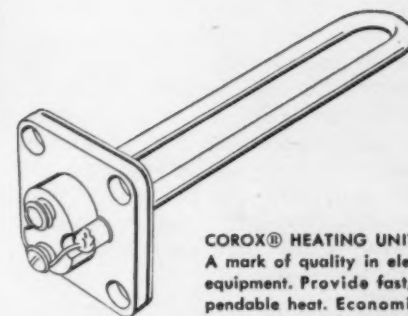
For example, in *Myers Hdwe. Co., Inc. v. Felop*, 76 Atl. (2d) 552, the testimony showed that a purchaser orally ordered from a seller certain kitchen cabinets for her home. *No written order was signed by the purchaser.* A few days later the seller measured the kitchen where the cabinets were to be installed and submitted a sketch to the purchaser for her approval. The purchaser approved the sketch and then the seller ordered from a manufacturer the cabinets, some of which were manufactured in accordance with the special specifications. In other words, the equipment was not suitable for sale to other purchasers.

Two months later the cabinets were received by the seller and the purchaser, named Felop, was notified of their arrival, and she examined the cabinets, and expressed complete approval of the equipment. However, the seller did not ask Felop to sign an agreement to pay for the cabinets and installation.

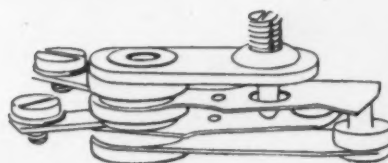
# if your product calls for ELECTRIC HEAT and CONTROL... it calls for WESTINGHOUSE!



**CLOSTEMP® THERMOSTAT**—High accuracy temperature control. Safe, sturdy, easy to set. Positive action. Fatigue tests simulate more than 50 years of perfect operation.



**COROX® HEATING UNITS**—A mark of quality in electric equipment. Provide fast, dependable heat. Economical, safe, efficient. Unit shown is for water heaters.



**UNI-THERM® THERMOSTAT**—Has many popular applications on both "traffic" and "major" appliances. Model shown is used on an automatic dishwasher.

Westinghouse Heating Elements and Thermostats cover every requirement. Units are Therm-a-neered\* to fit each need exactly... to provide practical, dependable operation. Devices shown here are typical of a wide range which can be supplied for applying and controlling heat to:

Aircraft Accessories • Air Heaters and Ovens • Appliances • Defrosting and De-icing Apparatus • Electrically-Heated Clothing • Food Processing and Handling Equipment • Hospital and Medical Equipment • Marine and Transportation Accessories • Aircraft Motor Protection • Ordnance Apparatus • Radio and Communications Equipment • Aircraft Signal and Alarm Systems

For data and application help on your problem, write Westinghouse Electric Corporation, Industrial Heating Division, Meadville, Pa.

J-92011

\*THERM-A-NEERING—A Heat and Control Engineering Service by Westinghouse



YOU CAN BE SURE... IF IT'S  
**Westinghouse**

**HEATERS AND THERMOSTATS**

Later Felop refused to accept and pay for the cabinets and the seller sued for \$521.00, the amount of his bill.

The higher court held that Felop need not accept and pay for the cabinets and installation because the contract was *verbal* and not in writing. The court said that since the amount of the contract exceeded \$500.00 it was void, because not in writing.

#### Buyer Fails to Accept Delivery

Modern higher courts consistently hold that under an *ordinary* contract a buyer cannot refuse to accept delivery of purchased merchandise. If so, the buyer can sue and recover the full contract price although he keeps the merchandise until it spoils. This is so because under such a contract the purchaser takes legal title to the goods immediately when the seller notifies the purchaser that the goods are ready for delivery.

For example, in *Fischer v. Means*, 198 Pac. (2nd) 389, it was shown that a buyer and seller entered into a written contract by the

terms of which the former agreed to purchase a quantity of banana squash at \$20.00 per ton. When the crop was harvested the seller notified the purchaser that the crop was then ready to deliver, but the purchaser failed to call for or accept delivery of the squash. Several days later the seller again notified the purchaser that the squash was ready for delivery, but the latter again failed to call for or accept delivery thereof. The squash remained in possession of the seller until it deteriorated.

The higher court held the buyer liable for a *full* contract price to the grower and said:

"When the seller is ready and willing to deliver the goods, and requests the buyer to take delivery, and the buyer does not within a reasonable time after such request take delivery of the goods, he is liable to the seller for any loss occasioned by his neglect or refusal to take delivery . . . We are of the opinion the title to the property passed to plaintiff (purchaser) in this case when he was notified that the fruit was ready for delivery at the building where the parties

stipulated it should be stored."

Modern higher courts consistently hold that a purchaser is not responsible for payment of purchased merchandise if the testimony shows that he did not complete the purchase contract.

#### Must Complete Purchase Contract

For example, in *Zarbell v. Mantas*, 204 Pac. (2nd) 203, it was shown that two parties signed a conditional sales contract for equipment, as purchasers. On the reverse side of the contract only *one* party wrote statements in reference to his credit standing in order to induce granting of credit. The other party named Mantas refused to sign his name on this reverse side of the contract.

The higher court held that since Mantas had not signed the reverse side of the contract he could not be held liable for payment of the merchandise. The court said:

"This conclusion must rest on the same evidence from which it has been determined that Mantas did not sign the contract as a purchaser."

## Accounting for Stockroom Supplies

By David Markstein

WHEN stockroom supplies are used — particularly smaller expendable items — the problem of keeping an accurate record of how many have been used, and in what sizes, may become an acute one. It's necessary to know, for stores-keeping and purchasing purposes, but the "paper work" involved in keeping such records may become voluminous and expensive out of all proportion to the items involved.

Take, for example, the case of a southern millworking company which was plagued by this problem. The glaziers in this plant helped themselves to cut-to-size panes of glass as needed. They were supposed to know and report how many were used each day, but they frequently forgot or merely guessed.

A simple system solved the problem. On a set of nails on a post next to the bins where the panes



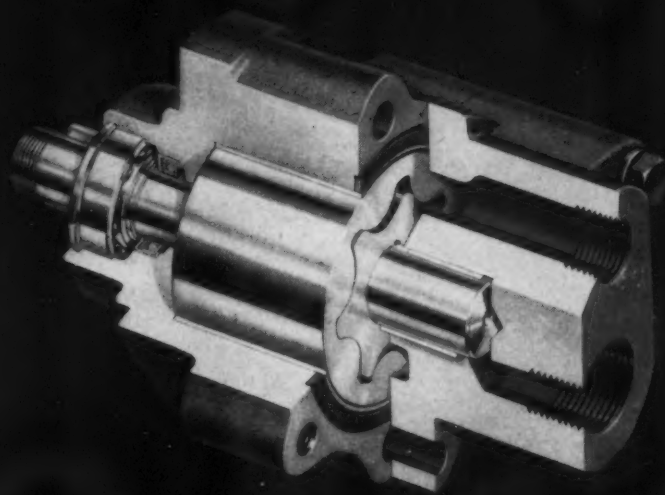
When the glazier needs another pane, he takes it out of stock and at the same time flips a size-marked tag from the nail; at the end of the day, a count of the tags tells accurately how many of each size have been used.



of various sizes are stored, there now hangs a supply of ordinary metal-rimmed tags. The strings of the tags are looped over the nails—a quick flip gets one off the post. Each tag is marked to denote one of the standard sizes, and there's a nail for each size. When a pane is taken for use, the glazier at the same time removes one of the tags with the right size marking and

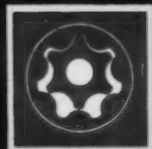
drops it into a box.

At the end of the day, he deposits all of the tags he has accumulated at the stockroom office. Next morning, a clerk empties the tags out of the boxes, sorts and counts them for an accurate record that requires no complicated bookkeeping—just one entry per day. He then replaces the tags on the nails, ready to serve for another day's operations.



# EATON ROTOR PUMPS

Provide a low-cost source of hydraulic power for a wide range of automotive, industrial, and farm implement applications. Outstanding characteristics are: long life, quiet operation, high mechanical efficiency, and easy maintenance.



EATON MANUFACTURING COMPANY

GENERAL OFFICES: CLEVELAND, OHIO



*Pump Division*



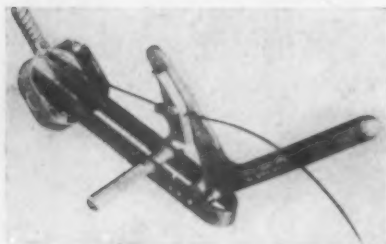
9771 FRENCH ROAD • DETROIT 13, MICHIGAN

# New Products Ideas



For additional information about New Products described in these columns, use coupon on this page.

## 2-in-1 Fishtape Puller



This fishtape puller combines the conventional hand puller with a detachable pressurized puller for more difficult jobs. Called the "Little Giant", it pulls from the top, sides and bottom, and is readily adjusted to pull at any angle, with any desired length of stroke. The controlled, automatic gripping and releasing action during operation eliminates kinking or snapping-out of fishtape. The sawtooth holding edge fits all standard outlet boxes, gutters, switches, etc. up to 8". The tool is made with a reversible hand

grip. Manufactured by Mallasch-Brandt Engineering Co., 1032 N. Orange Drive, Los Angeles, Calif.

No. 101 — Use Coupon on this Page

## New Electrical Steel Has Unusual Properties

Armco Steel Corporation, Middletown, O., has a new electrical steel, Tran-Cor T-O-S, which can be operated at very high inductions, 20% higher than any nickel-iron alloy. Thinner than most electrical steels, it is intended for use in wound-type transformers and reactors which operate at 400 cycles. Armco says the steel not only has a marked advantage in the low exciting current required at inductions over 16 kilogausses but also has a low core loss. It is supplied in only 4-mil thicknesses and in 12 $\frac{3}{8}$ " wide coils. The strip can be bent flat over a small radius then straightened without cracking, and easily slit or sheared.

No. 102 — Use Coupon on this Page

## Hand Truck Lifting Attachment for Bulky Jobs



A hand truck operator who has to lift bulky packages off the floor to load them on a dolly, strap them, or bring them to an upright position usually finds it a tough, dangerous job, even with a helper. With the Saf-T-Lifter, an attachment made by The Fairbanks Company, 393 Lafayette St., New York, N. Y., he is now able to support the package safely and securely in the raised position after it has been pried up with the nose truck. The attachment is released after the load is lifted, pushed forward to full travel, and the truck is firmly anchored as shown in illustration. The attachment is available on Fairbanks' 9272-2 and 9272-3 warehouse trucks.

No. 103 — Use Coupon on this Page

### READER SERVICE COUPON

JULY, 1951

MAIL TO:  
PURCHASING—Reader Service Dept.  
205 East 42 Street  
New York 17, New York

I want more information on New Products Numbers.

101	102	103	104	105	106	107	108	109	110	111	112
113	114	115	116	117	118	119	120	121	122	123	124
125	126	127	128	129	130	131	132	133	134	135	136
137	138	139	140	141	142						

Name..... Title.....

Company.....

Street Address.....

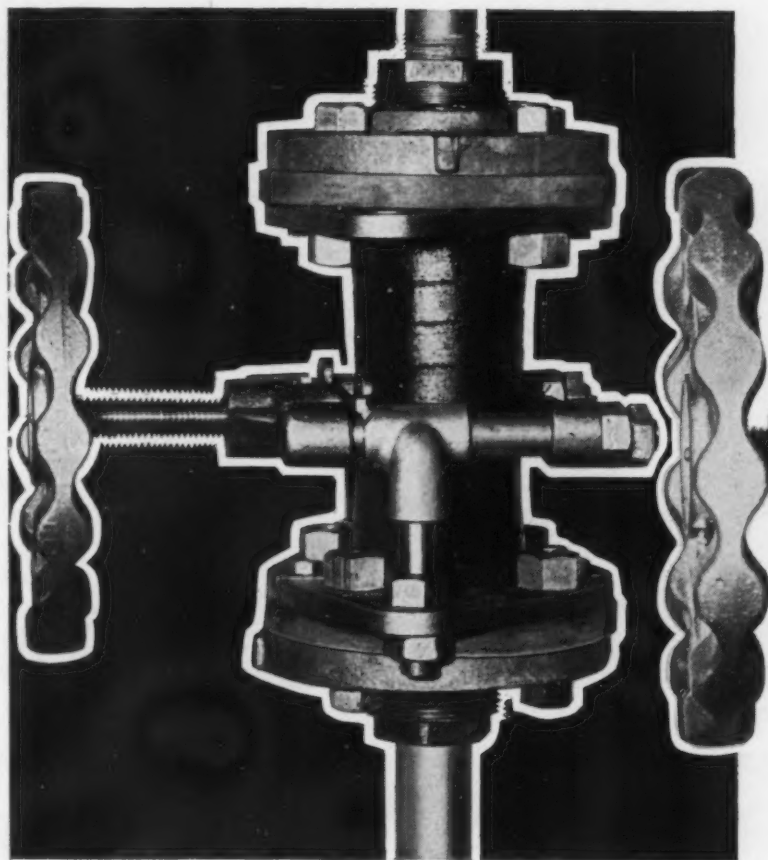
City..... Zone..... State.....

## Cylinder-Finish Tubing

Tube Reducing Corporation, Wallington, N. J., has a new line of tubing especially suited for use in hydraulic cylinders, shock absorbers and other applications where pressure is to be converted into mechanical movement. It is available in bores ranging from about 1 $\frac{1}{2}$ " to 6", depending on wall thickness. It is free of scratches, pits and other irregularities which

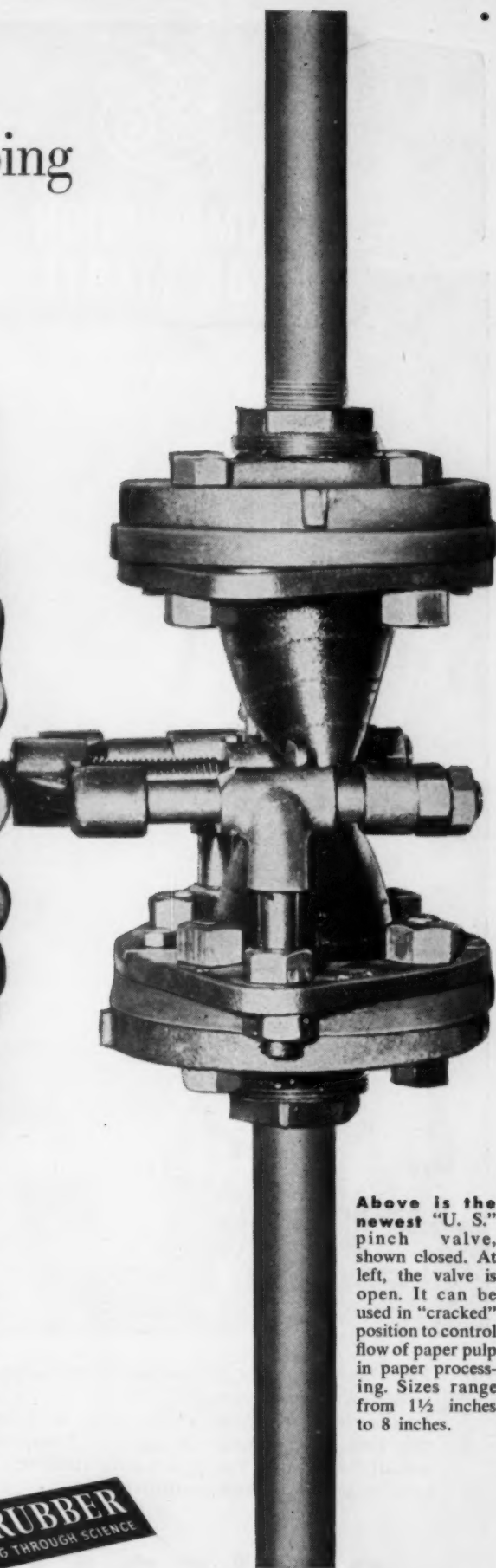
(Please turn to page 132)

# What's U. S. Rubber doing with pinch valves?



United States Rubber is squeezing out new production economies with its latest pinch valve. Designed for pipe lines carrying abrasive or corrosive mixtures, the valve eliminates "water hammer", breaks up galvanic action in pipe lines.

The valve reduces replacement costs because it can be refitted to new valve bodies. No packing or repacking is needed. Its design is very compact, with mechanism, retaining rings and pinch valve body in a single unit—an advantage where space is limited. The valve is available in neoprene for oil-resistance, or butyl rubber for high heat and severe acid conditions, or pure gum stock for food and beverage conveyance. Write to address below.



Above is the newest "U. S." pinch valve, shown closed. At left, the valve is open. It can be used in "cracked" position to control flow of paper pulp in paper processing. Sizes range from 1½ inches to 8 inches.

PRODUCT OF

**U.S. RUBBER**  
SERVING THROUGH SCIENCE

**UNITED STATES RUBBER COMPANY**

MECHANICAL GOODS DIVISION • ROCKEFELLER CENTER, NEW YORK 20, N. Y.

JULY, 1951

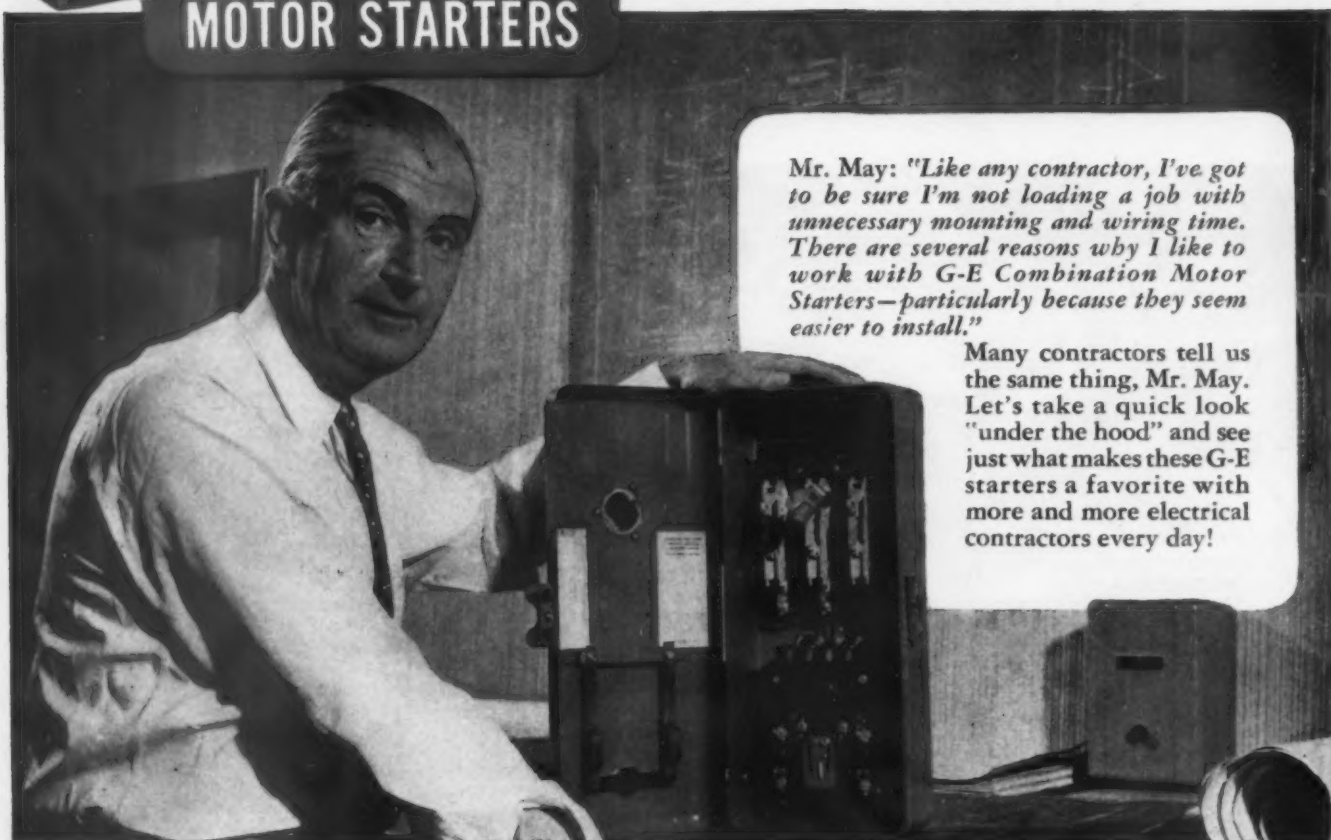
Please mention *PURCHASING Magazine* when writing to advertisers.

129



# ...save wiring

E. G. MAY, ELECTRICAL CONTRACTOR,

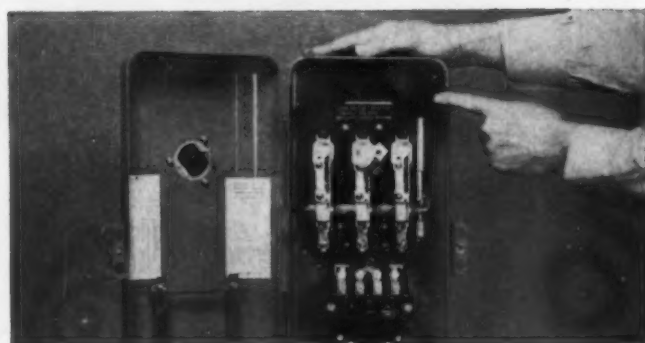


Mr. May: "Like any contractor, I've got to be sure I'm not loading a job with unnecessary mounting and wiring time. There are several reasons why I like to work with G-E Combination Motor Starters—particularly because they seem easier to install."

Many contractors tell us the same thing, Mr. May. Let's take a quick look "under the hood" and see just what makes these G-E starters a favorite with more and more electrical contractors every day!



**1** Mr. May: "Suppose we start with the mounting. There's a real time-saver!"  
That's right, Mr. May. Both starter and disconnect switch are mounted in one case. Thus, they're installed as a unit! You save wiring time and your customer gets a neater installation!



**2** Mr. May: "Wiring room is mighty important to a contractor."  
Then you should like the layout of this starter. There's plenty of room at top and bottom for line and load wiring. Of course, we take care of wiring the disconnect switch to the starter at the factory.

**GENERAL**  **ELECTRIC**

730-24

# time for these 4 reasons

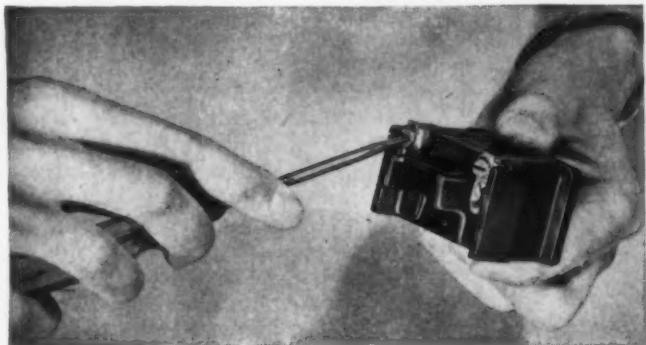
REVEALS THE "REASONS WHY" HE PREFERS G-E COMBINATION STARTERS



3

Mr. May: "Having these terminals up front makes them easy to work with!"

Remember, too, you're working with large pan-head screws. All you do is strip the wires, slide them under the terminal clamps which ride out with the screws, and then tighten. All terminals are big, rugged and permanently anchored.



4

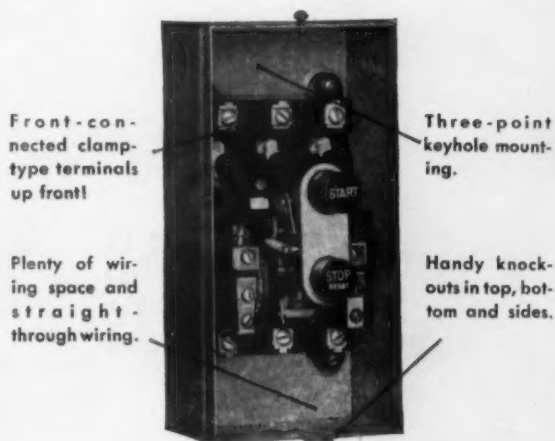
Mr. May: "I've heard a lot about this coil. What's so different about it?"

It's completely encased in plastic—so that neither you when installing the starter, nor your customer when servicing it can damage the coil with a slipping screwdriver; and you can assure your customers that these "Strong Box" coils last longer because water, dust and oil are sealed out!

**BUY ONE  
AND  
COMPARE!**

## G-E Manual Starters ...easier to install, too!

For manual starting of 7½ hp or smaller motors, you can't beat a G-E starter for easy installation, long life. Built to the same rugged specifications as the magnetic starter, it includes many of the same features for quick-wiring:



These starters are available with either push-button or toggle-switch operation, and can also be obtained in water-proof, dust-proof, or explosion-proof enclosures . . . 2-, 3-, or 4-pole forms.

G.E. also offers a complete line of control accessories to make operations more automatic . . . more convenient.

Take any G-E motor starter apart and inspect it. See for yourself why G-E starters last longer, cost less to install, and are easier to maintain than any starters you can buy. Your G-E representative or authorized distributor can supply many models of G-E starters in NEMA sizes 0, 1, 2, and 3 for motors up to 50 hp; anticipate your requirements and place your order early. For more information on magnetic starters, write for Bulletin GEA-5153; manual starters, Bulletin GEA-1522. Section 730-24, General Electric Company, Schenectady 5, N. Y.

# NEW APPROVED PUMP *SAFER* makes liquid handling



These new Tokheim Hand Pumps are a great boon to industrial safety. They stop wasteful dripping and slippery floors, reduce fire hazard, save on drum storage space, and eliminate accidents common to other methods of liquid transfer. Their fast, easy double-action speeds production, reduces costs. Ideal for handling many liquids. Available in hose and spout models for use with drums or underground tanks.

FOR USE IN  
SCORES OF  
INDUSTRIAL  
OPERATIONS

Approved for  
use with  
petroleum  
liquids — ideal  
for many  
others.



For filling oil coolant reservoirs directly from drum.



For refueling lift trucks and other industrial equipment.



For transferring liquids to smaller containers.



WRITE FOR  
LITERATURE

General Products Division  
**TOKHEIM OIL TANK AND PUMP COMPANY**

Wabash Avenue, Fort Wayne 1, Indiana  
Factory Branch: 1678 Howard Street, San Francisco 3, California

(Continued from page 128)

are ironed out when the tube is sized by pressure exerted between two dies and a mandrel. Because compression sizing cold-works the metal, the new cylinder finish tubing has better mechanical properties than hot-rolled or cold-drawn standard varieties. More information available from Joseph T. Ryerson & Sons Co., national distributor, or direct from the company.

No. 104 — Use Coupon on Page 128

## Automatic Pallet Loader Saves Time and Labor



Until recently, 40" was the minimum pallet width handled by Lamson Corporation's mechanical loading device. Now a new model is available to those industries whose products are best palletized on 36" wide pallets. Cartons or cases are conveyed to the top of the machine where electro-mechanical devices position them and push them on to pallets. Not only does the loader position alternate containers for best pallet arrangement, but when more than one size container is in production, it automatically positions intermittent predetermined pallet lots so that each is tacked properly on its pallet. A magazine automatically supplies pallets. Loaded pallets leave by roller gravity conveyor. Lamson is at Syracuse, N. Y.

No. 105 — Use Coupon on Page 128

## Washing Machine For Sanitizing Racks

Industrial Washing Machine Corp., New Brunswick, N. J., is offering a washing machine for sanitizing racks and the equipment on them. The unit has a capacity of 15 racks per hour. With this model, called the RW 36 x 82 W-F-R, a single operator merely loads the machine, sets the automatic timer button and pushes the starter button. The washer can be heated by steam, gas or electricity. It is only 9' long, 6'4" wide and 9'6" high. It can be installed either in a pit or at floor level, with a ramp supplied.

No. 106 — Use Coupon on Page 128

(Please turn to page 134)

You Pay Less for PAINT



You Pay Less for LABOR



on a



job

### ***This Simple Test Will Prove It***

All you have to do is take a gallon can of Barreled Sunlight and a gallon can of any other good paint and thin each according to directions on the cans. You'll see that Barreled Sunlight gives you more paint ready for the brush. Which means that for proper maintenance painting you need less Barreled Sunlight. You save money on the cost of your paint.

But that solves only 20% of your problem. Let's look at the big end of a painting job — the labor end.

Mark off equal areas on a wall and "stop-watch" the length of time it takes your maintenance painter to paint one with Barreled Sunlight and the second with any other paint. You'll find that he can cover yardage much faster and better with Barreled Sunlight. Which means that with Barreled Sunlight you can cut your labor costs — the cost that represents 80% of the total cost of a paint job.

This practical test has been made by those in charge of maintenance for many prominent industrial, institutional and commercial buildings. And those who have made it have been consistent users of Barreled Sunlight . . . some for better than 50 years.

**BARRELED SUNLIGHT PAINT CO., 18-G Dudley St., Providence, R.I.**

## **Barreled Sunlight** *Paints*

In whitest white or clean, clear, pleasing colors,  
there's a Barreled Sunlight Paint for every job

**IT ALWAYS COSTS MORE NOT TO PAINT!**



*Let your nearest Barreled Sunlight representative show you how to measure potential savings in your maintenance painting. Write, and he'll call.*



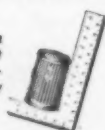
**Tough and Long Lasting**

WITT CANS have bull-dog toughness and will last for years and years under normal abuse. The best of materials and workmanship plus a superior design guarantee a wearing quality found in no other Can. WITT CANS defy all-out destructive efforts of heat, food acids, weather, heavy loading and rough handling.

Compare the WITT CAN with any other Can on these points . . .

- STRAIGHT SIDES**—assure extra resistance to rough handling.
- DEEP ROLLING CORRUGATIONS**—run full length of Can adding further rigidity.
- HEAVY GAUGE STEEL**—provides battleship ruggedness.
- STRUCTURAL STEEL BANDS**—protect top and bottom of Can and act as shock absorbers.
- HOT DIP GALVANIZING**—a hand process after fabrication, insuring heaviest possible rust-proofing.
- PINCH PROOF HANDLES**—for easy handling.
- STURDY LID**—snug fitting yet easy to remove.

If you want to get more out of a Can in service than you put into it in cash, buy WITT CANS—guaranteed to outlast 3 to 5 ordinary Cans.

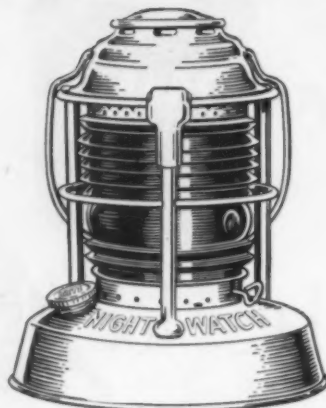


WITT CANS HAVE THE "Right Angle"

**Witt Cans**

THE WITT CORNICE COMPANY  
Cincinnati 14, Ohio  
"Originators of the Corrugated Can"

## Safety Lantern Throws Intense Vertical Beam



Industrial plants, municipalities, utilities, etc. will find use for a new safety lantern that projects concentrated light rays in a parallel, vertical beam of greatest possible intensity. This "pencil beam" lantern is made by R. E. Dietz Company, 60 Laight St., Syracuse, N. Y. The average lantern, says Dietz, spreads light in horizontal rays in a circle of wide proportions, but to a comparatively concentrated area. Every speck of light that would normally spread out is actually caught by the prisms of the "Night Watch" globe and projected in concentrated form to create a straight line beam. Because of the intensifying power of the globe, only a small burner and flame is required. Literature available.

No. 107 — Use Coupon on Page 128

## New Hand Pumps Feature Safety



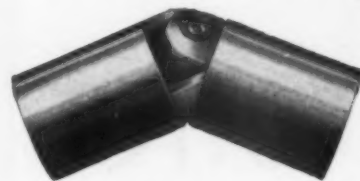
Safety is a prime consideration in three new industrial models of high vacuum hand pumps made by the Tokheim Oil Tank & Pump Co., Fort Wayne, Ind. Approved by Underwriters' Laboratories for dispensing gasoline and petroleum base products, they may also be used with vegetable oils, water,

glycerin, alcohol, turpentine and other solvents. All three models have hung adaptors with a vise-type screw which can be tightened on the suction stub without a wrench or pliers. Model 970 has a non-drip discharge spout which simplifies filling cans and small containers. Model 971 and 972 are equipped with 8' static wire hose and vacuum breaker, and 972 has an 8-gallon flow meter added.

No. 108 — Use Coupon on Page 128

## New High-Speed Universal Joints

Resistance to jaw spread and high speed performance are outstanding features of two new universal joints offered by The Gray & Prior Machine Co., Hartford, Conn. The joints, which come in



the 3/4" and 4-3/16" sizes, have the short, stubby jaws and large, equal size bearings which are characteristic of the Gray & Prior line. Sizes of 1 1/2" and over are equipped with large grease reservoirs to insure constant, adequate lubrication. The company says the design and riveted construction permit the joints to operate efficiently and carry normal loads without flying apart at speeds up to 3500 fpm.

No. 109 — Use Coupon on Page 128

## Gas Heated Mixer

Standard steam or hot water jacketed mixing units do not always provide the accurate heat control necessary in the manufacture of many chemicals, dyes, foods, paints, etc. L. O. Koven & Brother, Inc., Jersey City 7, N. J., has built a gas-fired mixer for processing under controlled heating conditions. The inner mixing tank, 36" diameter by 36" high with a dished bottom, is made of 14 gage stainless steel for atmospheric working pressure. A full jacket, for 5 psi gage working pressure, surrounds the inner tank. The outer jacket wall extends down and is flanged to form a stable base. Four ring-type gas burners are symmetrically positioned under the mixing tank. They are rated at 300 cfm and burn manufactured gas.

No. 110 — Use Coupon on Page 128

(Please turn to page 138)



**This H & D corrugated display box makes barbeques extra fattening—for sales figures!**

The customer is "just looking for a fork to roast hot dogs"—until she spies this gay yellow and black display, with its clever Hamburggrill and its Cube Steak Broiler. Then her picnic menu suddenly expands beyond "just wieners"—and sales figures expand beyond "just forks for roasting hot dogs."

H & D package action can increase profits on *your* products, too, by such grouping of related items for tie-in sales, or by giving better display . . . providing secure protection . . . increasing multiple sales. Write for H & D's 11-volume "Little Packaging Library." Hinde & Dauch, 5101 Decatur St., Sandusky, Ohio.

**H & D**

**HINDE & DAUCH**  
*Authority on Packaging*



FACTORIES IN: Baltimore • Buffalo • Chicago • Cleveland  
Detroit • Gloucester, N. J. • Hoboken, N. J. • Kansas City, Kan.  
Lenoir, N. C. • Richmond, Va. • Sandusky, Ohio  
St. Louis • Watertown, Mass. Offices in principal cities.

THE STANDARD S

GIVES T

**NOTICE: DESIGN AND  
PURCHASING DEPARTMENTS**

Standard's three-unit mills—each composed of a horizontal mill and two steam hammers for preliminary operations—can roll practically all sizes of rings up to a maximum of 12-feet outside diameter. Let us quote on your requirements.

Standard Weldless Ring Blank, rolled to close tolerances for conversion to a table rack spiral bevel ring gear for a boring mill.

**STANDARDIZE ON  
STANDARD FOR**

WHEEL MILL PRODUCTS,



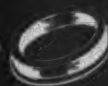
STEEL CASTINGS,

WELDLESS RINGS,



FORGINGS,

FLANGES,



Finish-machining the ring gear on a Niles vertical boring mill. Teeth have already been cut.



**BALDWIN**

STEEL WORKS ROLLED GEAR BLANK

THIS RING GEAR

*a better start in life*

The finished ring gear. Uniform metal structure assures high precision in gear tooth form and dimension.

The job of the table-rack spiral bevel ring gear on a modern boring mill is rough, rugged and responsible—and the only way to get the essential physical properties *in the gear* is to have them *in the blank*. Strength—to take the stress and strain of high-speed production with deep-cutting carbide tools. Uniform structure—to permit the precision machining that is the basis of precision operation. Accuracy in dimension—to save machining time and waste.

Standard Steel Works blanks meet every requirement. Starting with steel produced in Standard's own open-hearth furnaces, the rings are rolled to close tolerances to develop every desirable property inherent in the metal . . . heat treated to further improve service characteristics. If you have a ring-gear problem, Standard blanks may provide the solution you are looking for. You'll find Standard an ideal supplier—big enough to handle the most demanding jobs . . . small enough to make every job a matter of direct personal concern.

**STANDARD STEEL WORKS DIVISION**

Burnham, Mifflin Township, Pennsylvania

**BALDWIN-LIMA-HAMILTON CORPORATION**

Philadelphia 42, Pa. • Offices in Principal Cities

Niles 10-foot hydraulic-feed vertical boring mill; table is driven by the gear shown. This is a high-production machine, for use with carbide tools—which calls for high strength in the drive gear.

mill.

**-LIMA-HAMILTON**



**Important reasons why Pheoll**  
**SCREWS • BOLTS • NUTS**  
*Produce More Profit for You*

**MAINTAIN PEAK OUTPUT** with Pheoll precision-made screws, bolts and nuts—they will speed your assembly work and improve product appearance.

**INSURE PRODUCT PERFORMANCE** with Pheoll quality screws, bolts and nuts—standardize on these dependable industrial fasteners.

**HUGE MANUFACTURING FACILITIES** assure rapid production of both standard and special fasteners.

**SINGLE SOURCE OF SUPPLY** for screws, bolts and nuts in different sizes, types and metals.

**OVERNIGHT DELIVERY** to principal cities from centrally-located Pheoll factory and warehouses.

#### FACTS ABOUT Pheoll YOU SHOULD KNOW

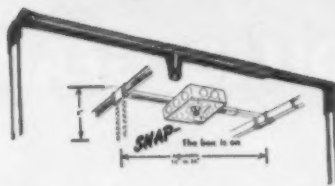
- One of the nation's leading producers of industrial fasteners.
- Pheoll products are widely used in part assembly when quality is of prime importance.
- Men who produce Pheoll industrial fasteners are highly trained and experienced craftsmen.
- All products are manufactured under rigid quality control standards.
- Constant product inspection from laboratory metal analysis, through production and final finish is your assurance of precision made, trouble-free screws, bolts and nuts.

Write for this free Bulletin



**Pheoll**  
**MANUFACTURING COMPANY**  
 8725 ROCKMONT ROAD  
 CHICAGO 26, ILLINOIS  
**SCREWS • BOLTS • NUTS**  
*Industrial Fasteners and Building Supplies*

## Hung-Ceiling Bar-Hanger Easily Installed



Installation of this hung-ceiling bar-hanger, Catalog No. HC-34, requires only three simple steps. The bar-hanger is extended to the proper width and laid on top of the channels. End-straps are wrapped around each channel. After the stud is positioned, the box is snapped on. Box may be any type or depth. Manufacturer is Fast Lok Manufacturing Company, Bridgeport 5, Conn.

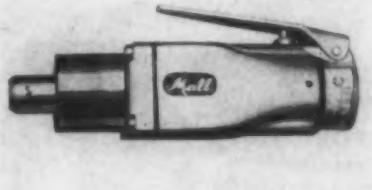
No. 111 — Use Coupon on Page 128

## Double-Reduction Speed Reducers

New type DB double-reduction speed reducers, in ratings from 1 to 100 hp, are available from Westinghouse Electric Corp., Box 2099, Pittsburgh 30, Pa. They are designed for applications on small to medium-size drives where the prime mover is coupled or belted to the gear unit. The reducers use all-external type helical gearing, arranged in a horizontal plane. When coupled to an electric motor, a straight-line drive results. Eight unit sizes are available; twelve standard gear ratios range from 6.25 to 58.3:1. The units are manufactured in accordance with recommended practices of the A.G.M.A.

No. 112 — Use Coupon on Page 128

## Pneumatic Grinder Solves Problems on Small Dies



Grinding problems on small dies, castings and hard-to-get-at spots are solved by this new pneumatic die grinder, according to the Mall Tool Co., 7725 S. Chicago Ave., Chicago, Ill. The entire tool is 4 5/8" long, 1 1/4" wide and weighs 12 oz. The company says this is the smallest and lightest rotary vane air

grinder on the market. A choice of lever or button type throttle with a special collet guard allows the operator to hold the tool close to the work, permitting fingertip operation with better balance in the tightest working areas. An arbor runout within .0015" allows extremely accurate work where pin-point grinding is required. Collets available to give complete range of shanks from 1/64" to 1/4".

No. 113 — Use Coupon on Page 128

## Flux Saves Silver Solder



Farrelloy Company, 1265 North 26th St., Philadelphia, Pa., says its AG Flux increases the bond of silver solder on stainless steel, monel, nickel, copper brass, bronze and steel. It increases the spreading action of the solder and the tinning coverage, thereby saving silver. By making the solder more fluid, it reduces porosity to the vanishing point, the company states, making clean, nonporous brazed joints. Less mechanical skill is required of the operator since the flux withstands a wide range of heat. Residue may be removed by washing with hot water.

No. 114 — Use Coupon on Page 128

## Front Dump Control Adds To Truck's Versatility

Kalamazoo Manufacturing Co., Kalamazoo 24F, Mich., has greatly increased the versatility of its Kal-Truck with a dump control on the front end gate. The control door allows easier pouring into small or narrow openings. It also permits discharging partial loads. The dump control is manually operated and may be opened or closed at any time. A front end gate embodying the feature can be furnished for installation on trucks already in service. The Kal-Truk's capacity is 2/3 yds. or 3000 lbs.

No. 115 — Use Coupon on Page 128

(Please turn to page 142)

ADD FLEXIBILITY TO YOUR SURFACE GRINDERS WITH

# EX-CELL-O

## PRECISION SPINDLES

You can add to the flexibility of your surface grinders, and perhaps save the cost of another machine, with Ex-Cell-O spindle equipment. For instance the large photo at left shows an inbuilt motor spindle that swivels vertically. It makes a standard surface grinder suitable for sharpening cutters and broaches. A mounting member extends through bore in column that ordinarily houses the standard horizontal spindle.

The Ex-Cell-O High Speed Attachment also adds to the flexibility of surface grinders. This attachment mounts on the standard horizontal spindle or spindle bracket. The standard surface grinding wheel is replaced by a pulley that, through a flat belt, drives the high speed spindle at 18,000 rpm. Thus, small wheels can be driven at an efficient speed for grinding small shoulders, slots and other hard-to-reach places.

For rigid, smooth-running spindles that require no further lubrication or adjustment, and produce fine work day after day, contact your Ex-Cell-O representative or write to Ex-Cell-O Corporation in Detroit.

Send today for Ex-Cell-O's free Precision Grinding Spindle Catalog, Number 25962. No obligation, of course. Just use your company letterhead.

Ex-Cell-O 1 horsepower, 3600 rpm inbuilt motor spindle for surface grinder. Spindle swivels vertically, is used for sharpening cutters and broaches.

Standard horizontal Ex-Cell-O Precision Spindle with 1 horsepower, 3600 rpm inbuilt motor for surface grinders. Standard Ex-Cell-O belt-driven spindles also are available for this type of grinder.

This Ex-Cell-O High Speed Attachment drives small wheels at 18,000 rpm. It is driven by the standard motorized spindle and is supported by the standard spindle or spindle bracket.



# EX-CELL-O CORPORATION

DETROIT 32  
MICHIGAN

MANUFACTURERS OF PRECISION MACHINE TOOLS • CUTTING TOOLS • RAILROAD PINS AND BUSHINGS  
DRILL JIG BUSHINGS • AIRCRAFT AND MISCELLANEOUS PRODUCTION PARTS • DAIRY EQUIPMENT

# Republic Tips

## TO ELEVATOR BELT USERS

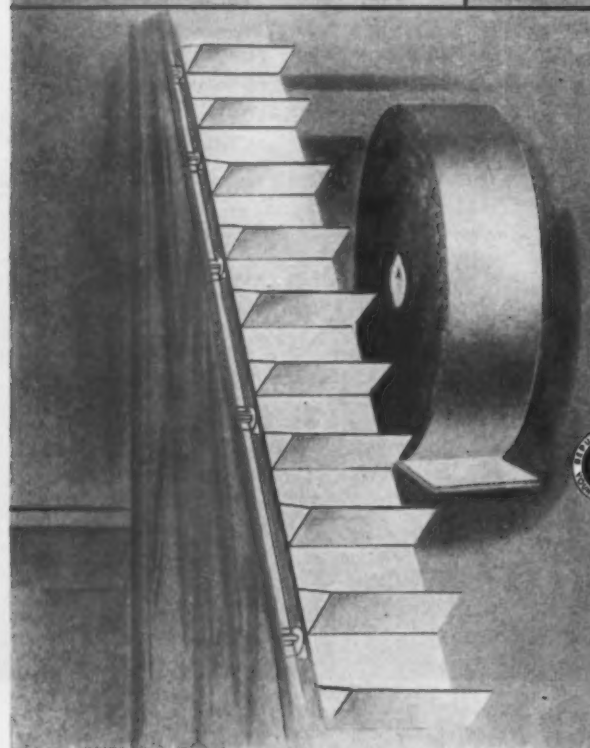
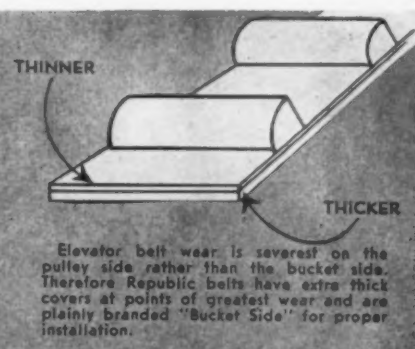
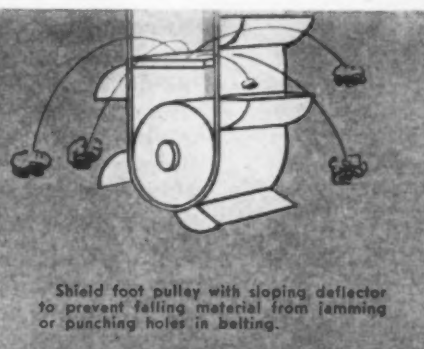
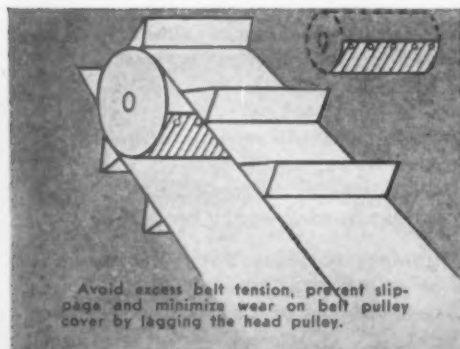
● With Republic Elevator Belting on the job, you're set to handle bigger pay loads with less trouble.

Don't lose this advantage by improper methods of application and maintenance!

Your local Republic Rubber Distributor can show you many ways to improve efficiency and increase service life of elevator belts. As an experi-

enced specialist, he is fully prepared to help you select exactly the right Industrial Rubber Product for your requirement. Contact him today.

Remember, Republic Rubber has been *the* specialist in the field of Industrial Rubber Products for more than 50 years. Use Republic products and you use the best. Use Republic products *correctly* and you save the most!



## stop costly breakdowns with REPUBLIC ELEVATOR BELTING!

Republic Elevator Belting is built to keep moving under the most grueling working conditions.

Made in fold-edge construction with multiple plies of heavy, prestretched rubber-insulated fabric, Republic Elevator Belting is specially designed to resist bolt pull at the buckets.

Tough abrasion-resistant black rubber covers give belt carcasses maximum protection . . . stand up longer under more severe service requirements.

Republic Elevator Belting is supplied in all standard widths and plies. All fabrics are permanently treated against mildew.

See your local Republic Distributor or write direct for full facts.



INDUSTRIAL RUBBER PRODUCTS BY  
**REPUBLIC RUBBER DIVISION**

Lee Rubber & Tire Corporation  
YOUNGSTOWN, OHIO

• "you name it...I helped make it!"



## Glue that plans our defense

What helps to develop new ideas? Glue! Resin wood glue. Used everywhere from foundry patterns to pencils. Look at a pencil. It's made of two pieces of wood. A length of "lead." An eraser. All glued together. Next, walk through a pattern-making shop. Resin wood glue again! Moisture-resistant. Fast setting, in minutes, not hours. Non-abrasive so that knives and saws won't dull. Strength stronger than wood.

... where else is resin wood glue used?

• "you name it...I helped make it!" What's a drawing board? Wood glued edge-to-edge. And end-locked. With glue lines as soft as the wood. No hard ridges. Look at engineers' scales, slide rules, drafting tables, desks, office partitions and doors. The NATIONAL touch is everywhere. Glue applied through imaginative research and service. To every item of defense.

STARCHES

**National**

ADHESIVES

Executive Offices: 270 Madison Ave., New York 16, N. Y. • Plants: Dunellen, N. J., Chicago, Indianapolis, San Francisco. • Sales Offices: All principal cities. • Canada: Toronto and Montreal. • England: Slough. • Holland: Veendam.

## CONSERVE CORRUGATED BOARD!

Use a Non-Tear Adhesive

### RE-USE CARTONS

**SOFT SEAL**—National's non-tear case-sealing adhesive—permits carton flaps to be lifted with ease. Yet, its bond will not permit flaps to pop open during shipping or handling.

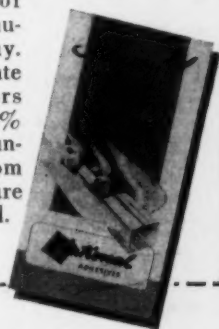
**SOFT SEAL** permits cartons to be opened far more easily than conventional case-sealing glues.

**SOFT SEAL** comes ready-for-use. For all types of corrugated and fibrous cardboard stocks. Sets fast. Machines beautifully.

We'd like to seal some of your cases with **SOFT SEAL**; and some with your present glue. Then have you open both. Or, we'll send you a trial drum.

**FREE BOOKLET:** SUCCESSFUL CASE SEALING will assist users of corrugated and solid fibre containers in improving their sealing work.

A corrugated or solid fibre shipping case is only as efficient as its seal. Suppliers of these containers have made numerous structural improvements to give your products added protection against the hazards of shipping, but losses continue because many shippers still use sealing methods and materials which are outmoded or ineffectual on the majority of case stocks manufactured today. Carriers estimate that containers lose at least 50% of their value unless the bottom and top flaps are properly sealed.



Write to:

**NATIONAL ADHESIVES**  
270 Madison Avenue  
New York 16, N. Y.

#### I'M INTERESTED IN:

- ☐ A **SOFT SEAL** demonstration in my plant.
- ☐ A trial drum of **SOFT SEAL**.
- ☐ A copy of National's Successful Case-Sealing Booklet.

Mr. \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

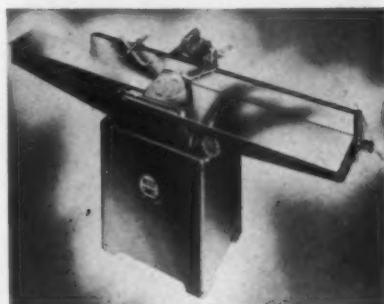
City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

時 千  
不 載  
再 一  
來 遇

...one way of saying "A little late is very late!" And it's the same in any language... one little part just a little late can make a whole assembly line very, very late!

Today there's too much at stake to risk production delays with ordinary air services. Specify EMERY AIR FREIGHT, "The World's Fastest Transportation Service"... get certain delivery to or from any point in the Country, day or night, 365 days a year! There's an Emery office or agent as close as your telephone!

## New Jointers Are Rugged Yet Accurate



Boice-Crane Company, 953 Central Ave., Toledo 6, O., says its new 6" and 8" jointers are rugged enough for planing mills, yet accurate enough for the most demanding cabinet makers. They are of welded, all steel construction and have the longest fences of any 6" or 8" machines, and longest tables of any 8" machines. The all-steel construction is said to permit strength, permanent accuracy and alignment impossible with bolted-up cast iron construction which tends to warp and is vulnerable to breakage. Micrometer-accurate knife-setting system assures smoother operation and better finish.

No. 116 — Use Coupon on Page 128

## Safety, Speed Featured In Lift Jack System



A lift jack materials handling system made by Lansing Co., Lansing, Mich., features increased safety and speed. The positive action jack will lift 3000 lbs. of distributed weight with only a slight handle pressure, and with no danger of kick-backs or slipping. The jack, which can be used with any number of wheeled skid platforms, can be attached from any angle at the front of the platforms. The equipment rolls easily on rubber tired roller bearing wheels, and its extremely short turning radius makes it completely maneuverable. The platforms, constructed of heavy angle-iron with hardwood decks, can be stored in a small space by vertical stacking.

No. 117 — Use Coupon on Page 128  
(Please turn to page 144)

# PROCUREMENT PROBLEMS ?

check with your Reynolds  
distributor



Reynolds is putting forth every effort to ease your aluminum-buying problems. To meet the growing demand Reynolds Metals Company and other U. S. producers have already started on another vast expansion program which will greatly increase the country's aluminum production capacity.

To meet your immediate problems the nearby Reynolds distributor listed below is

doing his level best to fill orders from limited stocks.

You can also count on his assistance and guidance in selecting temporary alternate materials. He will apply all of his experience and energy to helping you out. Present your procurement problems to him. Now as always he will give you the kind of service you need and want.

## YOUR REYNOLDS DISTRIBUTOR IS LISTED BELOW

### ALABAMA

Arnold-Brown Metals & Supply Co.,  
Birmingham  
Southern States Iron Roofing Co.,  
Birmingham

### CALIFORNIA

Clingan & Fortier, Inc.,  
San Francisco  
Richard G. Stern & Co.,  
Los Angeles  
Ray-Molbrook, Inc.,  
San Francisco  
Union Hardware & Metal Co.,  
Los Angeles  
United States Steel Supply Co.,  
Los Angeles and San Francisco  
Western Metal Supply Company,  
San Diego

### COLORADO

Marsh Steel Corporation,  
Colorado Springs and Denver

### CONNECTICUT

American Steel & Alloys Corp.,  
Hartford

### FLORIDA

Horne-Wilson, Inc., Jacksonville,  
Miami, Orlando and Tampa  
Southern States Iron Roofing Co.,  
Jacksonville and Orlando

### GEORGIA

Southern States Iron Roofing Co.,  
Albany, Atlanta and Savannah

### ILLINOIS

J. G. Braun Co., (Architectural only)  
Chicago  
Silverstein & Pincus Inc., (Ingots only)  
Chicago  
United States Steel Supply Co.,  
Chicago  
Benjamin Wolff & Co., Chicago

### INDIANA

Brass & Copper Sales Co.,  
Indianapolis

### KENTUCKY

Southern States Iron Roofing Co.,  
Louisville

### LOUISIANA

Southern States Iron Roofing Co.,  
New Orleans

### MARYLAND

Clendenin Bros., Inc., (Wire, rod, bar,  
structurals) Baltimore  
Lyon, Conklin & Co., Inc., Baltimore  
United States Steel Supply Co.,  
Baltimore

### MASSACHUSETTS

Bay State Refining Co., (Ingots only)  
Chicopee Falls  
Arthur C. Harvey Company, Boston  
Pratt & Inman, (Wire, rod, bar,  
structurals) Worcester

### MICHIGAN

Kasle Steel Corporation, Detroit  
McDonnell Bros., (Architectural only)  
Detroit

### MINNESOTA

United States Steel Supply Co.,  
St. Paul  
Vincent Brass & Copper Co.,  
Minneapolis

### MISSISSIPPI

Southern States Iron Roofing Co.,  
Hattiesburg

### MISSOURI

Brass & Copper Sales Co.,  
Kansas City and St. Louis  
Marsh Steel Corporation,  
N. Kansas City

### NEW JERSEY

Edgcomb Steel Corporation, Hillside

### NEW YORK

J. G. Braun Co., (Architectural only)  
New York  
Edgcomb Steel Corporation,  
Hillside, N. J.  
Rochester Smelting & Refining Co.,  
(Ingots only) Rochester

### NORTH CAROLINA

Southern States Iron Roofing Co.,  
Raleigh

### OHIO

The Atlas Metal Co., (Ingots only)  
Cleveland  
Hamilton Steel Company, Cleveland  
Mutual Manufacturing & Supply Co.,  
Cincinnati

### OREGON

American Steel Warehouse Co.,  
Portland

### PENNSYLVANIA

Atlas Steel Service Co., Philadelphia  
Colonial Smelting & Refining Co.,  
(Ingots only) Columbia  
Levinson Steel Sales Company,  
Pittsburgh  
Merchant & Evans Co., Philadelphia  
Potts-Farrington Company,  
Philadelphia

### SOUTH CAROLINA

Southern States Iron Roofing Co.,  
Columbia

### TENNESSEE

Southern States Iron Roofing Co.,  
Nashville and Memphis

### TEXAS

Moncrief-Lenoir Mfg. Co.,  
Dallas, Ft. Worth, Harlingen,  
Houston, Lubbock, San Antonio  
and Temple

### UTAH

Salt Lake Hardware Co., Salt Lake City

### VIRGINIA

Southern States Iron Roofing Co.,  
Richmond

### WASHINGTON

Seattle Steel Company, Seattle

### WISCONSIN

United States Steel Supply Co.,  
Milwaukee  
Benjamin Wolff & Co., Milwaukee

LOOK UNDER "ALUMINUM" IN YOUR CLASSIFIED TELEPHONE DIRECTORY



# REYNOLDS ALUMINUM

MODERN DESIGN HAS ALUMINUM IN MIND

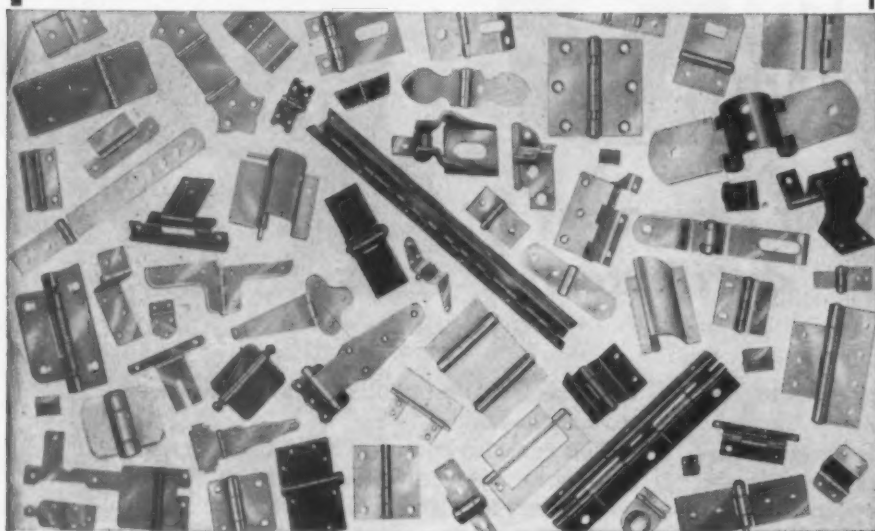
## Make **STANLEY** your hinge source!

You just specify the hinge you want—Stanley does the rest, from first sketch to finished product.

Stanley gives you the advantage of expert designers and production engineers—research and tool-making facilities—the particular plating and

finish best suited to your needs.

As the world's largest producer of hinges, Stanley is geared for efficient production to meet your requirements. Write for full information—not only on special hinges but drawings and stampings as well—now!



### PRESSED METAL DIVISION

The Stanley Works  
New York  
Chicago

Detroit  
San Francisco

New Britain, Conn.  
Los Angeles  
Seattle

**STANLEY**

Reg. U.S. Pat. Off.

HARDWARE • TOOLS • ELECTRIC TOOLS • STEEL STRAPPING • STEEL

## THIS SQUIRT LOOSENS-

Frozen  
Bolts  
Bushings  
Bearings



It's fast and accurate . . .

Shoots 15 feet — a drop or a squirt. It's labeled Kroil — so you can grab it quickly when a frozen bolt, screw or bearing starts to cost expensive time or threaten production.

That is when KROIL creeps into millionth inch spaces to soften rust, dissolve gum and supply lubrication to loosen the parts. It's fast and it's positive.

"Kano Kroil always opens up the tight fitting covers on fire extinguishers for us. It is truly a wonderful preparation. We have found such covers we could not force off with a blow of a hammer. Several minutes' seepage of Kroil did the trick," so says a service organization for fire extinguishers.

Kroilers are priced at \$1.50 each and are well worth it. As an inducement to try Kroil we offer the combination of one Kroiler and one gallon of Kroil — (listed at \$3.50) for \$4.75, f.o.b. factory.

If you are not one of the 8,500 industrial plants already using Kroil, send for a gallon on the proposition that it will loosen the most stubborn frozen part or you get your money back.

## KANO LABORATORIES

1083 Thompson Lane, Nashville 11, Tenn.

## It rolls . . . it folds in any direction!



Save

TIME

SPACE

MATERIAL

MONEY

SHELLCREASE is flexible yet provides full protective qualities of corrugation. Easily "molded" around any shaped item, eliminating costly, space-wasting stuffings. Reduces shipping weight and costs.

Use any kind of fastening . . . no outside wrapping. Approved under Army and Navy Specs. 72" rolls, 250 feet long, also Sheets cut to order. 35, 55, 70 and 100 lb. basis.

Write Dept. 591-I for samples and literature

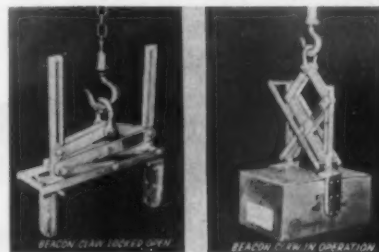
**Shelton**

MANUFACTURING  
CO., INC.

591 Ferry St., Newark 5, N. J.

CORRUGATED PAPER PRODUCTS SINCE 1919

## Automatic Lock Cuts Material Handling Time



This lock-equipped Beacon claw remains open after the load is discharged, unlike the ordinary tong-type grabs that collapse. Thus the claw can be placed over the next load immediately, without "resetting". Operator fatigue is lessened by minimizing adjusting and positioning time. Other features listed are: scissor-action that insures greater holding power as the load increases; parallel gripping surfaces that protect cartons and boxes from damage in handling. Made by Cleveland Beacon Products Co., 1480 Lakeside Ave., Cleveland, O.

No. 118 — Use Coupon on Page 128

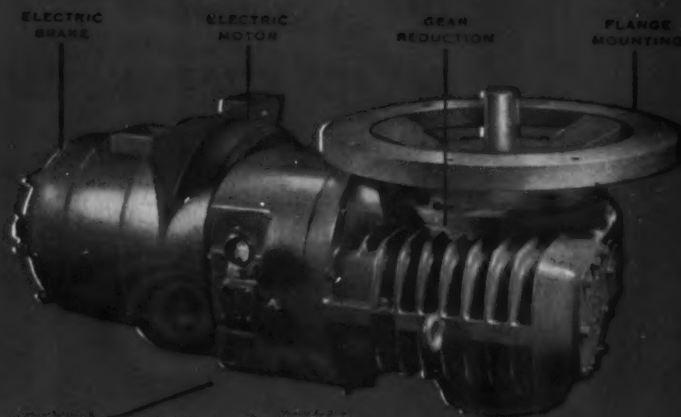
## Dispenses Chemicals In Controlled Stream



Laboratory workers can now mete out liquid chemicals from unbreakable Plaxpak polyethylene bottles in a controlled, thin stream by means of a new dispensing fitment. Designed by S. H. Ansell & Sons, 817-825 Summer St., Boston, Mass., Plaxpak distributor, the fitment consists of a 45° tubular polyethylene spout telescoped into a flexible plastic tube that extends the full depth of the bottle to give dispensing action. Duration of stream depends on amount of squeeze applied to bottle. Size of stream can be varied by stretching tip of the spout, or snipping off part to enlarge opening. Spout is easily replaced if damaged.

No. 119 — Use Coupon on Page 128

(Please turn to page 146)



You can't beat the combination of the RIGHT horsepower, the RIGHT shaft speed, the RIGHT features all in one compact unit that you can use RIGHT where you want it. It's the best way and the easiest way to select your power drives because you purchase one unit, handle one unit in your receiving, production, or maintenance departments . . . set one unit in place and you're ready to go.

Master Motors, available in *it's so easy to do it* thousands and

thousands of types and ratings (up to 150 HP) give you an enormous selection of integrally built power drives from which you can easily select the combination of features that's just right for each job.

Open, enclosed, splash proof, fan-cooled, explosion proof . . . horizontal or vertical . . . for all phases, voltages and frequencies . . . in single speed, multi-speed and variable speed types . . . with or without flanges or other special features . . . with 5 types of gear reduction up to 432 to 1 ratio . . . with electric brakes . . . with mechanical variable speed units . . . and for every type of mounting . . . Master has them all and so can be completely impartial in helping you select the one best motor drive for YOU.

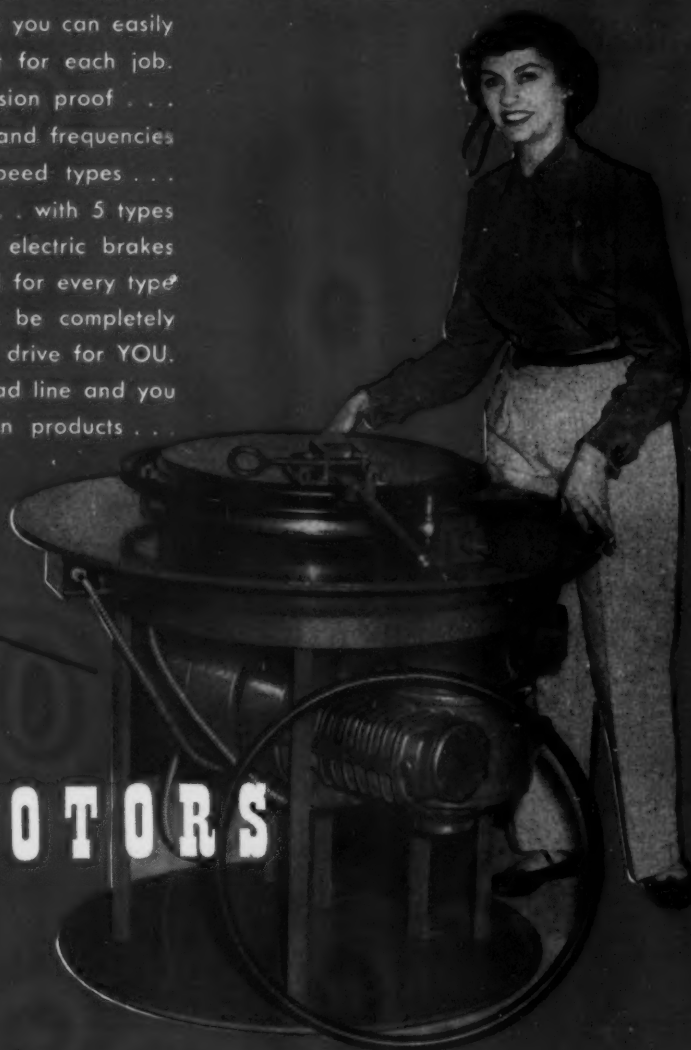
Select the RIGHT power drive from Master's broad line and you can increase the saleability of your motor driven products . . . improve the economy and productivity of your plant equipment.

**THE MASTER ELECTRIC COMPANY**  
DAYTON 1, OHIO



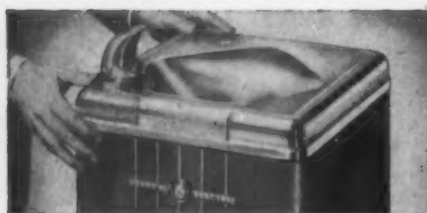
**GEARMOTORS**

**RIGHT**



# Your employees will like the sanitary new G-E Water Cooler!

## water coolers



**STAINLESS-STEEL TOP**—Its handsome, satin-smooth Tampico Brush finish is easy to keep clean. Scientifically designed to prevent spillage. Sanitary—no crevices or corners to collect bacteria.



**ANGLE STREAM, NON SQUIRT BUBBLER**—Stream angled to avoid water dripping back on nozzle from lips.



**ASK** your local G-E dealer for advice on your water cooler requirements. Look for his name in the classified pages of your telephone book.



**SURE-TREAD FOOT PEDAL CONTROL**—Easy to use—permits drinking when hands are full. Sanitary—avoids transfer of germs from user's hands to bubbler.



**DIAL THE WATER TEMPERATURE YOU WANT**—Control knob easily reached behind removable front panel, yet concealed against tampering. Set it and forget it.

### FREE! 24-PAGE BOOK!

General Electric Company, Section P-3  
Air Conditioning Department  
Bloomfield, New Jersey

Please send without obligation to me the fully illustrated book, "Water at Work."

NAME.....

COMPANY.....

ADDRESS.....

CITY.....ZONE.....STATE.....

You can put your confidence in—

# GENERAL ELECTRIC

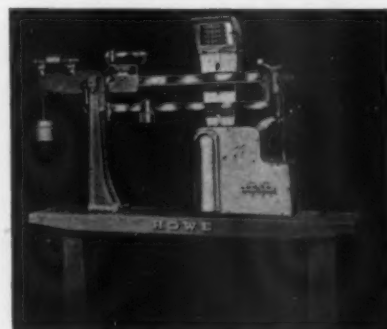
## V-Belt Drive Boosts Hoist's Efficiency



The Rocket "51" electric chain hoist, introduced by David Round & Son, Cleveland 5, O., features a V-belt drive design said to be an entirely new development in chain hoist construction. The V-belt driven cam-actuated gear mechanism with a 10½ to 1 ratio develops a hoisting efficiency of 95.6%. Power is transmitted to the load wheel with less frictional loss than in a gear assembly, and at a saving in cost. Weight is 79 lbs. and headroom 14". Current models are in 500 lb. and 1000 lb. capacities. Lifting speeds available are 17, 21, 24 and 34 fpm. Use of conventional coil type chain permits maximum flexibility in the hoist's operation.

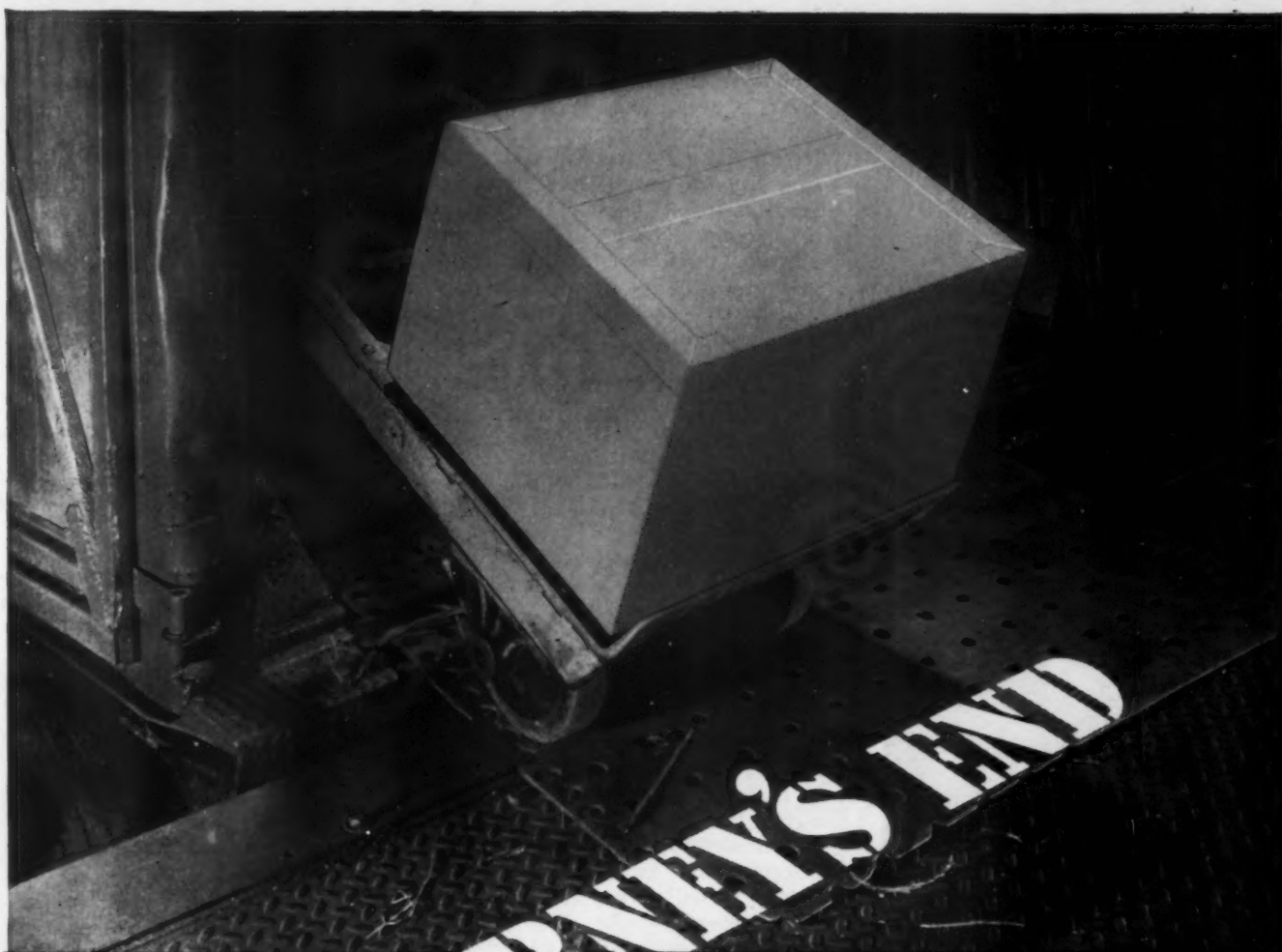
No. 120 — Use Coupon on Page 128

## Accessory Converts Beam Scale to "Automatic"



You can change your old beam scale—or any scale convertible to beam operation—into an "automatic" of the latest type, with an accessory made by The Howe Scale Company, Rutland, Vt. Called the Weightograph, it is simply attached to the beam shelf and connected to the beam with a rod. It features a non-protruding periscope, with a convenient eye-level screen

(Please turn to page 148)



# JOURNAL'S END

and Protected by **Gaylord**  
*All the Way!*



CORRUGATED AND SOLID FIBRE BOXES  
KRAFT PAPER AND SPECIALTIES  
KRAFT BAGS AND SACKS  
FOLDING CARTONS

It has been a long, rugged trip with plenty of rough handling, but there it is — fresh as a daisy — just as it left the factory.

Gaylord Boxes are especially designed and manufactured to provide maximum protection for the product — and they do just that *all the way!*

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Oakland • Minneapolis • Detroit • Columbus • Fort Worth • Tampa • Dallas • Cincinnati • Des Moines • Oklahoma City • Portland  
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**"CHESTER"**  
 FOR DEPENDABLE  
 CHAIN  
 HOISTS!



...particularly when you  
 need "Specials" fast!

With a modern, compact, completely integrated plant—Chester Hoist is in a position to move fast on special orders. In some cases, we have been able to make shipments in one-third the time required by other hoist manufacturers.

In addition to a standard line of Spur Gear and Differential Hoists—from 1/4 to 25 tons—we can give fast service on Extended Hand Wheel types, Low Head Room Trolley Hoists, or other "Specials".

Send us your specifications. Or write for our "complete catalog."

**CHESTER HOIST DIVISION**  
 The National Screw & Mfg Company  
 Lisbon, Ohio

P-2

(Continued from page 146)

which instantly flashes the exact weight in large, illuminated, crystal-clear figures. The image is read off the mirror to promote readability under all sorts of light. The unit has no complicated parts—no gears, friction discs, racks, pinions or weighing springs. It is furnished with a shelf lever which allows greater flexibility in application.

No. 121 — Use Coupon on Page 128

**Machine Prints Cartons  
 Rapidly and Easily**



This machine for combination printing and folding of corrugated cartons brought a fivefold increase in speed over previous methods for a shingle manufacturer. Using resilient rubber type, quickly and easily inserted and requiring no make-ready, it will print 2000 to 2400 impressions per hour. Since a quick-drying, non-caking ink is used, type and ink rollers need not be cleaned after using. Side rails are adjustable to take various sizes of containers. Spring loaded pressure roller compensates for variations in container thickness. Driven by 1/4 hp motor and enclosed reducer. Made by The Industrial Marking Equipment Co., 454 Baltic St., Brooklyn, N. Y.

No. 122 — Use Coupon on Page 128

**Heat Sealer Works Well  
 On Odd-Shaped Objects**



Widespread use of thermoplastic film as protective covering for products has brought at least a couple of problems—the high cost of sealing equipment, and the inability to seal odd-shaped objects. Sealine

(Please turn to page 150)

**We Sell Air...**

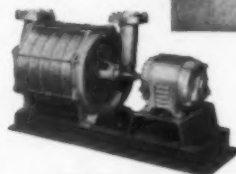
**BILLMYRE  
 BLOWERS &  
 EXHAUSTERS  
 FOR AIR OR GAS**

No internal lubricant required — hence, air is delivered clean and dry.

Constant pressure maintained — no controls or regulating devices required for power, pressure or relief.



Centrifugal Type,  
 Single and Multi-  
 stage, 1/2 lb. to 7  
 lbs. pressure, 1/2  
 H.P. to over 10 H.P.



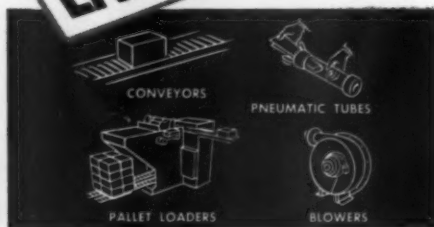
**Applications:**

Agitation and Aeration, Combustion, Cooling and Ventilation, Gas and Acid Manufacturing, Conveying and numerous other applications having various pressure or vacuum requirements.

**Half-Century of Experience**

Our engineering staff is at your command. Call on us when you have an air-moving problem.

Bulletin 5-B gives descriptions, applications and specifications. Free—send for it today. Write: Lamson Corporation, Blower Division, 415 Lamson Street, Syracuse 1, N. Y.



What you can do to make the supply of Stainless Steel  
go further



# Make full use of the steel you get by keeping down scrap losses in your shop

## Keep these points in mind, too, when you order Stainless

Tell your supplier exactly  
where you'll use Stainless and  
how you'll fabricate it.

Minimize scrap losses at the  
mill by ordering the exact  
sizes that you will use.

Indicate, if possible, accep-  
table alternates in compo-  
sition, gage and finish.

Holding your own scrap losses to a minimum to make the fullest use of the steel you receive is good shop practice anytime. It's especially important today.

Here are a few suggestions that may help you stretch your supplies. See that they are followed. Add other rules that your operations may dictate.

1. Lay out your jobs to use steel as economically as possible. Then order to the closest possible size.
2. Keep your stock of Stainless Steel carefully separated by grades.
3. In your storage areas, make sure that surface finishes are protected properly.
4. Lay down strict rules for careful fabrication and handling. It will help you reduce rejections.

No matter how carefully these rules are followed, there'll always be a certain amount of scrap. To keep new steel flowing to you, get your scrap back into circulation as quickly as possible by *promptly* turning in every pound to the mills.

AMERICAN STEEL & WIRE COMPANY, CLEVELAND • COLUMBIA STEEL COMPANY, SAN FRANCISCO

NATIONAL TUBE COMPANY, PITTSBURGH • TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM • UNITED STATES STEEL COMPANY, PITTSBURGH

UNITED STATES STEEL SUPPLY COMPANY, WAREHOUSE DISTRIBUTORS, COAST-TO-COAST • UNITED STATES STEEL EXPORT COMPANY, NEW YORK



## U·S·S STAINLESS STEEL

SHEETS • STRIP • PLATES • BARS • BILLETS • PIPE • TUBES • WIRE • SPECIAL SECTIONS

UNITED STATES STEEL

Threadwell  
Tools do  
many jobs



they can do your tough ones



When you're racing against time . . .

the quickest way to get that tapping  
job done right the first time is to  
specify Threadwell. Saves time and  
money when it counts . . . NOW!

. . . ask your Threadwell Distributor



THREADWELL TAP & DIE CO. GREENFIELD, MASS.

(Continued from page 148)

Mfg. Corp. says its low-cost "Sealine" 50 hand sealer is the answer to both. The 2½" diameter free-rolling heated wheel shown above can get over and around areas heretofore untouchable with a sealer. A variety of wheels is available for different applications—sealing cellophane bag ends, butt-scaling thin vinyls, and cutting and sealing other films. The sealer makes use of a special fluid which is automatically fed to the wheel through a wick arrangement. Temperature is adjustable from 200° to 450°. Sealine is at 170 N. Peoria St., Chicago 7, Ill.

No. 123 — Use Coupon on Page 128

### Pumps Handle Corrosive, Non-Corrosive Liquids



Small centrifugal, all-rubber pumps for handling both corrosive and non-corrosive liquids have been introduced by The Gorman-Rupp Co., Mansfield, O. They are powered by tiny electric motors of from 1/200 to 1/35 hp motors. The pumps can be held on the flat of the hand, and weigh from 2 to 4 lbs. They are available as all-rubber, or as rubber and bronze or zinc. Types are: enclosed and skeleton units, motor-driven, and belt-drive units. Overall capacity range is from 504 gph at 2' head, to 78ph at 10' head.

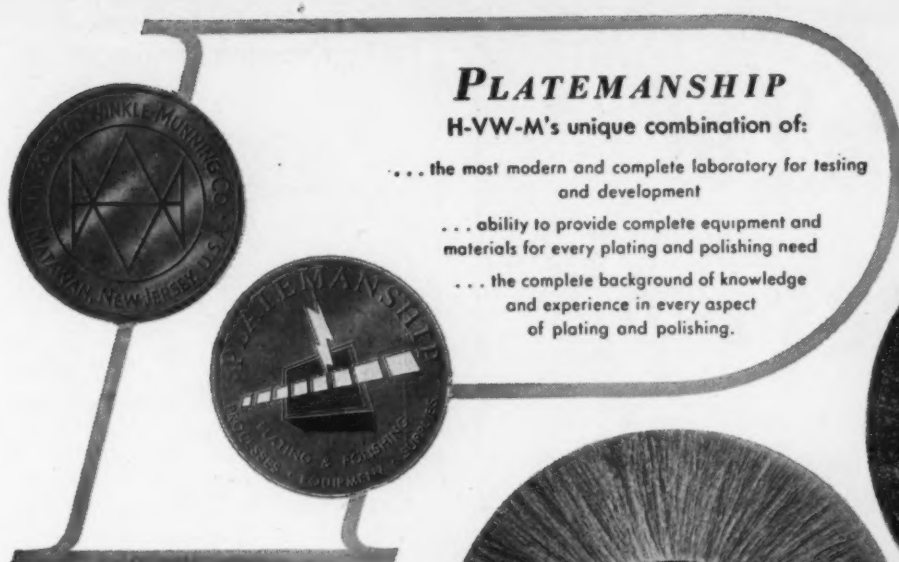
No. 124 — Use Coupon on Page 128

### Floor Maintenance Team

The Diversey Corporation, 1820 Roscoe Street, Chicago, Ill., has introduced a new "team" of floor maintenance products said to provide clean, bright, safe floors more easily and at a low cost. Plyowax is a non-slip, water emulsion wax that gives a bright, safe surface. Plyokem is a neutral, liquid cleaner especially formulated to assure the efficient maintenance of waxed surfaces. Free samples of both products are available from Diversey.

No. 125 — Use Coupon on Page 128

(Please turn to page 152)



## PLATEMANSHIP

H-VW-M's unique combination of:

- ... the most modern and complete laboratory for testing and development
- ... ability to provide complete equipment and materials for every plating and polishing need
- ... the complete background of knowledge and experience in every aspect of plating and polishing.

## ONLY H·VW·M PLATEMANSHIP

brings you  
the advantages  
of STAPLBOND BRUSH CONSTRUCTION

As specialists in meeting and anticipating the needs of the electroplating and polishing industry, H-VW-M can always be relied upon to supply the *right* brush for every job. Two all-inclusive lines are available ...

*StapLbond Tampico Brushes* for the widest possible flexibility of application in metal cleaning and polishing. The use of *Acme Emery Paste* or *Cake* with them is recommended for polishing irregular steel surfaces; pumice or special compounds for producing a satin finish; cleaning solutions for brush cleaning all metals.

*StapLbond Steel Wire Brushes* for heavy brushing, cleaning, etc., on rubber, castings, gear teeth and for removing scale, rust and paint from metal surfaces.

H-VW-M supplies a complete line of brushes to meet all requirements—brushes which embody all the refinements of *Platemanship*—are designed for long, fully dependable service regardless of the task to which they are put. Detailed reasons why they are preferred are found in Bulletin BR-104. Send for it.



... that provides rigid, strong, fibrous centers which combine economy with efficiency and durability

... that evenly distributes tampico fibre or wire around the hub and securely anchors it in position with a steel ring.

... that concentrically trims each section to insure perfect balance

... that enables H-VW-M to supply brushes that are exactly right for the service for which they are intended—brushes that turn in a consistently dependable performance over a longer period of time.

HANSON-VAN WINKLE-MUNNING COMPANY, MATAWAN, NEW JERSEY  
PLANTS AT: MATAWAN, N. J. • ANDERSON, INDIANA • SALES OFFICES: ANDERSON • BOSTON • CHICAGO  
CLEVELAND • DAYTON • DETROIT • GRAND RAPIDS • MATAWAN • MILWAUKEE • NEW HAVEN  
NEW YORK • PHILADELPHIA • PITTSBURGH • ROCHESTER • SPRINGFIELD (MASS.) • STRATFORD (CONN.) • UTICA

# H·VW·M

INDUSTRY'S WORKSHOP FOR THE FINEST IN PLATING AND POLISHING PROCESSES • EQUIPMENT • SUPPLIES

# Over Half of America's Top Rated Companies USE *Speed Sweep*

THE BRUSH WITH THE STEEL BACK

Sweeps Cleaner,  
Faster, Easier.  
Outlasts Ordinary  
Brushes 3 to 1

Speed Sweep has become the No. 1 sweeping tool of American industry — used by over 50,000 firms. It is the only brush that is specially designed to do a thorough sweeping job with less effort. It is also the only brush that is constructed to outlast ordinary brushes. Whether you use a few or a lot of brushes, you'll find it pays to use Speed Sweep.

*Mail the handy coupon today.*



**Milwaukee Dustless Brush Co.**

530 North 22nd St., Milwaukee 3, Wis.

DATE \_\_\_\_\_

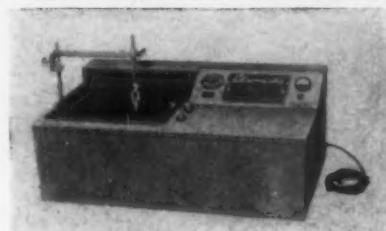
Send complete facts about Speed Sweep.

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

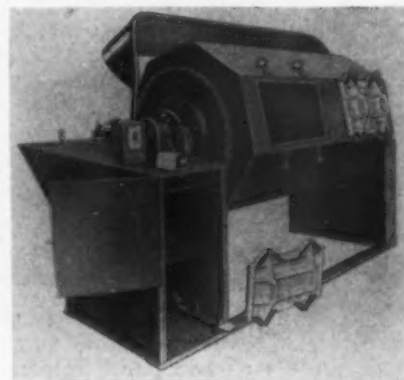
## Tool Life Increased By Chrome Plating Unit



After only 3 minutes plating time in the Model A-50 Chromaster, the average life of cutting tools and wear parts can be increased 2 to 10 times, according to Ward Leonard Electric Co., South St., Mt. Vernon, N. Y. The unit is compact, self-contained and easy to operate. It has a capacity for hard chrome plating metal surfaces totaling 25 sq. in. max. at the recommended current density of 2 amps per sq. in. Chromasol, the non-critical, economical plating solution developed for use in the Chromaster, operates at room temperature. It is shipped as a concentrated liquid ready for dilution with water. The hard chrome deposit can be applied directly on industrial steels, cast iron, and most non-ferrous metals.

No. 126 — Use Coupon on Page 128

## Compact Tumbling Barrels



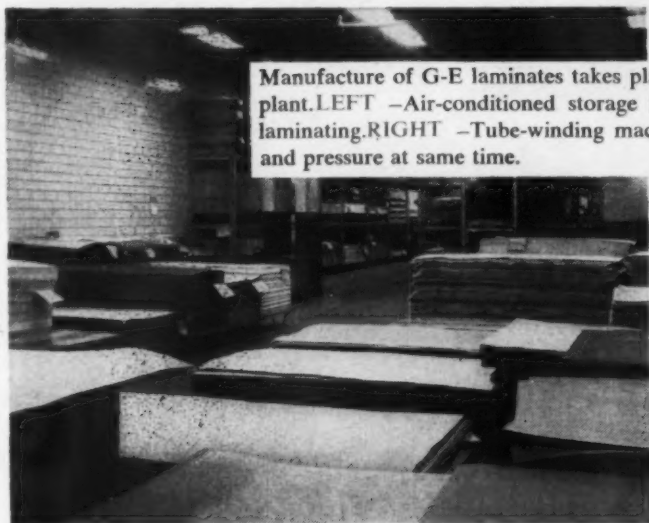
Compact design and complete safety in operation feature the "Murco" tumbling barrels manufactured by D. J. Murray Manufacturing Co., Wausau, Wis. Made in both constant and variable speeds, the barrels have motor and operating mechanism totally enclosed. Only exposed parts are the controls and magnetic reversing starter. Limit switch permits operation only when the hood is closed. Illustrated is the 7½ hp constant speed model that operates at 25 rpm. The barrels are also made in 5 hp and 3 hp models.

No. 127 — Use Coupon on Page 128  
(Please turn to page 154)



# LAMINATES NEWS

News of General Electric Laminated Plastics that can be of importance to your business.



Manufacture of G-E laminates takes place at new, ultra-modern Coshocton, Ohio, plant. LEFT - Air-conditioned storage for treated material helps assure uniform laminating. RIGHT - Tube-winding machine rolls laminated tubing, applying heat and pressure at same time.



## EXCEPTIONAL CHEMICAL RESISTANCE IS FEATURE OF NEW G-E LAMINATE

Wherever corrosive chemicals are handled, it's worth considering equipment fabricated from a new phenolic (plastics) laminate recently announced by General Electric.

Designated G-E 2016, the new material is available in sheets and tubes. Important advantages for a wide range of industrial applications are *exceptional chemical resistance, mechanical toughness, resistance to repeated impacts.*

G-E 2016 is produced with canvas base material. Investigate its cost-saving possibilities in pipe lines, for fabricating plating tanks, dye vats, for structural work—where extra strength and chemical resistance are most important. Write Section Y-4, Chemical Division, General Electric Company, Pittsfield, Massachusetts.

## G-E Laminates for Refrigerators

Laminated plastics for refrigerator inner-doors are preformed by G.E. and supplied to many major manufacturers. Advantages of this use of G-E laminates over metal materials mean better insulation, less condensation, improved finish, rustlessness, reduced weight, elimination of denting. *Look into G-E molded laminates for your products!*

## Complete Line of G-E Laminates

General Electric produces a complete line of laminated plastics—either molded or in forms of sheets, tubes and rods, with cloth, paper, glass fabric or special bases—for a wide variety of applications. (Also, look to General Electric for silicone insulation, insulating varnishes, sealing and filling compounds, mica insulation, varnished cloth and tape.)

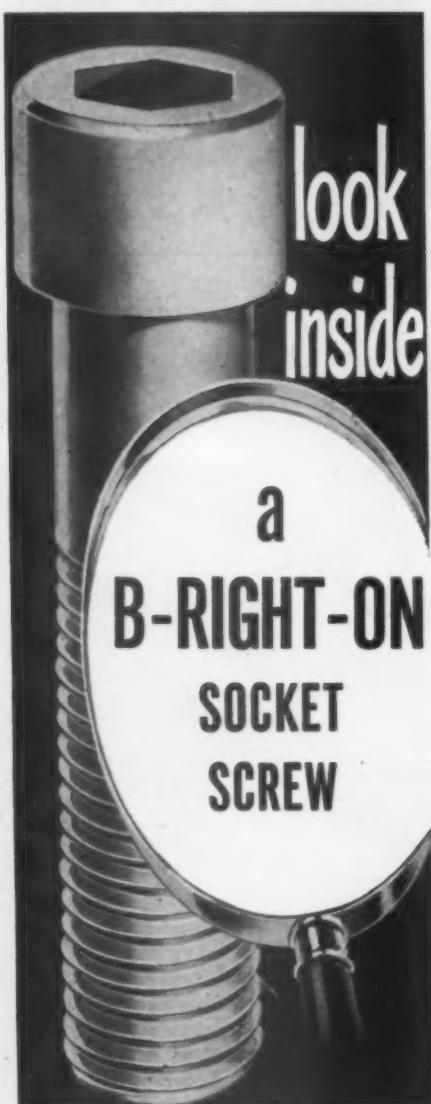
## DEFENSE CONTRACTORS!

Investigate the many ways G-E Laminated Plastics do the work of metals—and do it better—as parts, structural materials, electrical insulation. General Electric is ready to work with you in every stage of product development.

*You can put your confidence in*



# GENERAL ELECTRIC



There's more than meets the eye in a Brighton Socket Screw! Brighton Nu-Process, an entirely new metal working process, forms special alloy-steel into screws with continuous unbroken fibers and fine, compact grain. This greater toughness allows greater strength and hardness.

New catalog now ready. Write for your copy. The Brighton Screw & Manufacturing Co., 1829 Reading Rd., Cincinnati 2, Ohio.

**BRIGHTON**  
Screw & Mfg. Co.

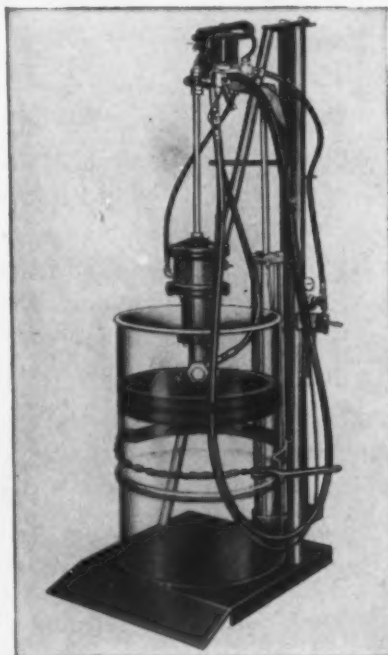
### Portable Conveyor Is Compact, Light, Mobile



One man can move and operate this light, compact Hytrol portable folding conveyor. Suitable for fast handling of products in bags, boxes, bundles, bales and cartons, it is especially adapted to chores in warehouse aisles and other small areas, and for between-floors operations. Angle of delivery can be changed while the conveyor mechanism is in motion. The unit is made in 5 sizes, each of which folds to one-half its own length. The largest can be stored in an area less than a half-yard square. Details available from exclusive distributor, Seedburo Equipment Co., 618 W. Jackson Blvd., Chicago, Ill.

No. 128 - Use Coupon on Page 128

### Air Ram Elevator For Heavy Lubricants



For delivery of heavy lubricants and mastic materials which will not readily seek their own level, Lincoln Engineering Company of-

fers a hydraulically-operated, single air ram elevator. It is used with Lincoln's DeLux air-motor operated drum pumps. The company says the unit will exert 7,110 lbs. pressure on material and will completely empty and clean sides of 400 lb. or 55 gal. drums. Complete details available in Bulletin 768. Lincoln is at 5783 Natural Bridge Ave., St. Louis 20, Mo.

No. 129 - Use Coupon on Page 128

### Small, High Pressure Gate Valves of Forged Steel



Leading process engineers designed this forged steel gate valve particularly for the high pressure field, according to R-P&C Valve Division, American Chain & Cable Company, Inc., Reading, Pa. Among its features are a bolted bonnet which insures maximum service life and low cost maintenance, tongue and groove joint with soft iron gasket to assure tightness under varying service conditions, and extremely hard wedge facing that minimizes seizing, galling and abrasive wear. Available in sizes of  $\frac{1}{4}$ ",  $\frac{3}{8}$ ",  $\frac{1}{2}$ ",  $\frac{3}{4}$ ", 1",  $1\frac{1}{4}$ ",  $1\frac{1}{2}$ ", and 2".

No. 130 - Use Coupon on Page 128

### Hardness Tester About Size of a Slide Rule

A precision-made hardness tester approximately the size of a slide rule is an unusual new product of A. H. Company, Brighton, Mich. The light-weight, low cost tester measures  $8\frac{3}{4}$ " x  $1\frac{1}{2}$ " x  $\frac{1}{2}$ " and can be carried to wherever comparative checking or quality control is desired. Operation is simple. A hammer with non-elastic Carboloy tip is allowed to drop a determined distance to rebound to reading position. Conversion charts accompany the tester so that comparative Rockwell or Brinnell readings can be quickly obtained. The tester can also be used on the line or in quality spot-checks for comparative Go and No Go testings.

No. 131 - Use Coupon on Page 128

(Please turn to page 158)

ARTIST: RICHARD LINDNER



GREAT IDEAS OF WESTERN MAN

... ONE OF A SERIES

## Immanuel Kant

Two things fill the mind with  
ever new and increasing  
admiration and awe, the oftener  
and the more steadily we reflect  
on them: *the starry heavens above*  
and *the moral law within*.

*Critique of Practical Reason, 1788*

CONTAINER CORPORATION OF AMERICA



JULY, 1951

Please mention **PURCHASING** Magazine when writing to advertisers.

155

You didn't buy it

the supplier didn't sell it

but **OCS\*** is present in every conventional belt!

## **ROTOCURE Eliminates this major cause of Belt Failure**

\* Overcured Sections—present every 30' to 40' in all belts made by the flat press method. Only Rotocuring eliminates this major cause of belt failure.

Many of the premature failures of conventionally-made conveyor belts can be attributed to *overcured* or *double-cured* segments of 2" to 4" wide across the entire belt. These "Achilles Heels" occur every 30 to 40 feet and cannot be eliminated in conventional or flat press curing because the earlier cured sections in this "stop and go" operation move forward *less than a full press length* each time.

Realizing that continuous vulcanization was the solution (and the *only* solution) to this problem, BWH technologists developed ROTOCURE. In this BWH *continuous* curing process, press overlapping is impossible, overcuring is completely eliminated and flex life steps up as much as 40%.

What's more, users of BWH ROTOCURED belts have found that ROTOCURE eliminates mechanical distortion at the press ends . . . assures constant, uniform stretch . . . provides uniform, abrasion-resistant covers.

It all pays off in longer belt life, less maintenance and appreciable cost per ton savings in material conveyed. Ask your BWH distributor or write us direct.

You'll find these advantages in BWH rotocured transmission belts, plus a higher coefficient of friction since no dusting agents are needed. Because of this, you can operate at lower tensions — an additional factor contributing to longer belt life.

### DIAGRAMATIC SKETCH OF EXCLUSIVE ROTOCURE PROCESS



Another Quality Product of

## **BOSTON WOVEN HOSE & RUBBER COMPANY**

Distributors in all Principal Cities

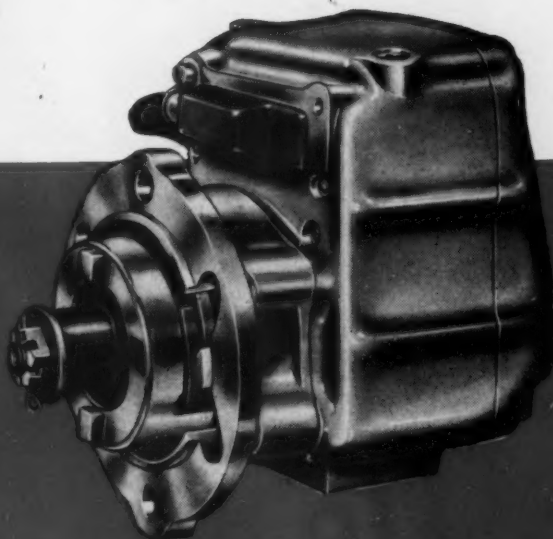
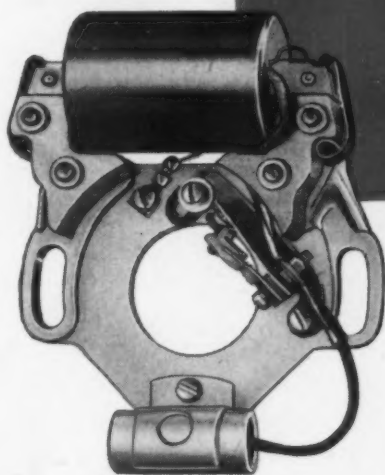
PLANT: CAMBRIDGE, MASS. • P. O. BOX 1071, BOSTON 3, MASS., U. S. A.

**IS YOUR PROBLEM  
MORE ECONOMICAL  
OPERATION  
IN YOUR SMALL ENGINES?**

*Specify*  
**BENDIX**

**THE MOST TRUSTED NAME  
IN MAGNETOS**

- ✓ **Simplicity in design.**
- ✓ **Waterproof moulded coil.**
- ✓ **Lower operating cost.**
- ✓ **Minimum lubricating requirement.**
- ✓ **Light in weight.**
- ✓ **Higher voltage at starting speeds.**
- ✓ **Constant spark over entire speed range.**
- ✓ **Compact and sturdy construction.**



There is no need for inflation in small engine operating and maintenance costs if you specify Bendix magnetos. The fact is, a new high in dependable performance can be obtained at no extra cost. The basic design of these rugged lightweights enables Bendix to meet the operating problems of *every type* of small engine, as well as *every pricing requirement*. If you want to hold down operating costs for the small engines you employ, be sure to insist on Bendix—the most trusted name in magnetos. Write us for full details.



**SCINTILLA MAGNETO DIVISION of  
SIDNEY, NEW YORK**

Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N. Y.

**FACTORY BRANCH OFFICES:**

117 E. Providencia Avenue, Burbank, California • 582 Market Street, San Francisco 4, California • Stephenson Building, 6560 Cass Avenue, Detroit 2, Michigan • Brouwer Building, 176 W. Wisconsin Avenue, Milwaukee, Wisconsin





In this modern plant skilled craftsmen, modern equipment and scientific controls all combine forces to produce strip steel of consistently uniform quality. Wallingford uniformity means that gage, temper and surface are in all ways and at all times the same. Edges are always smooth and straight, surfaces uniformly clean and flat, widths consistently exact. This uniform quality means savings in preparation time and smoother, faster operation to cut down machine stoppages and minimize rejects.

## THE WALLINGFORD STEEL CO.



**WALLINGFORD, CONNECTICUT, U.S.A.**  
**LOW CARBON • HIGH CARBON**  
**ALLOY • STAINLESS • STRIP and TUBING**

### New Hand Pumps



Blackmer Pump Company, 1829 Century Ave., Grand Rapids, Mich., has introduced new hand pumps in 7, 10, 14, and 28 gpm capacities, each in several models. They are available with suction and delivery pipes for drums and skid tanks; with return drip-pan for barrel mounting; with refueling hose and nozzle; with floor stand for underground tanks; with brackets for wall or foot mounting; with locking device; and with changes of accessories for combinations.

No. 132 — Use Coupon on Page 128

### Hydraulic Hand Truck Lifts and Stacks

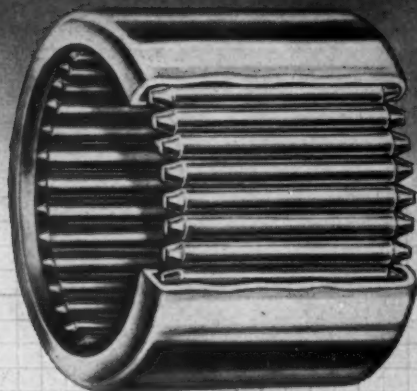


Clark-Hopkins Equipment Corp., Philadelphia 23, Pa., has brought out a new hand truck with a built-in hydraulic hoist for lifting and stacking. The truck is specially suited for handling heavy cases and barrels from ground level where loading docks are not available. It weighs only 111 lbs. yet has a ca-

(Please turn to page 162)



**compact...**



Torrington Needle Bearings fit in tight places. These efficient units have the smallest O.D. in relation to radial load capacity of any anti-friction bearings.

This combination of compact size and high capacity has proved an important design advantage from the standpoint of space-savings and weight reduction. Products utilizing Needle Bearings are models of simplicity and efficiency.

If your application requires compactness coupled with high capacity, get acquainted with Torrington Needle Bearings. We'll be glad to help you adapt them to your specific needs.

**THE TORRINGTON COMPANY**

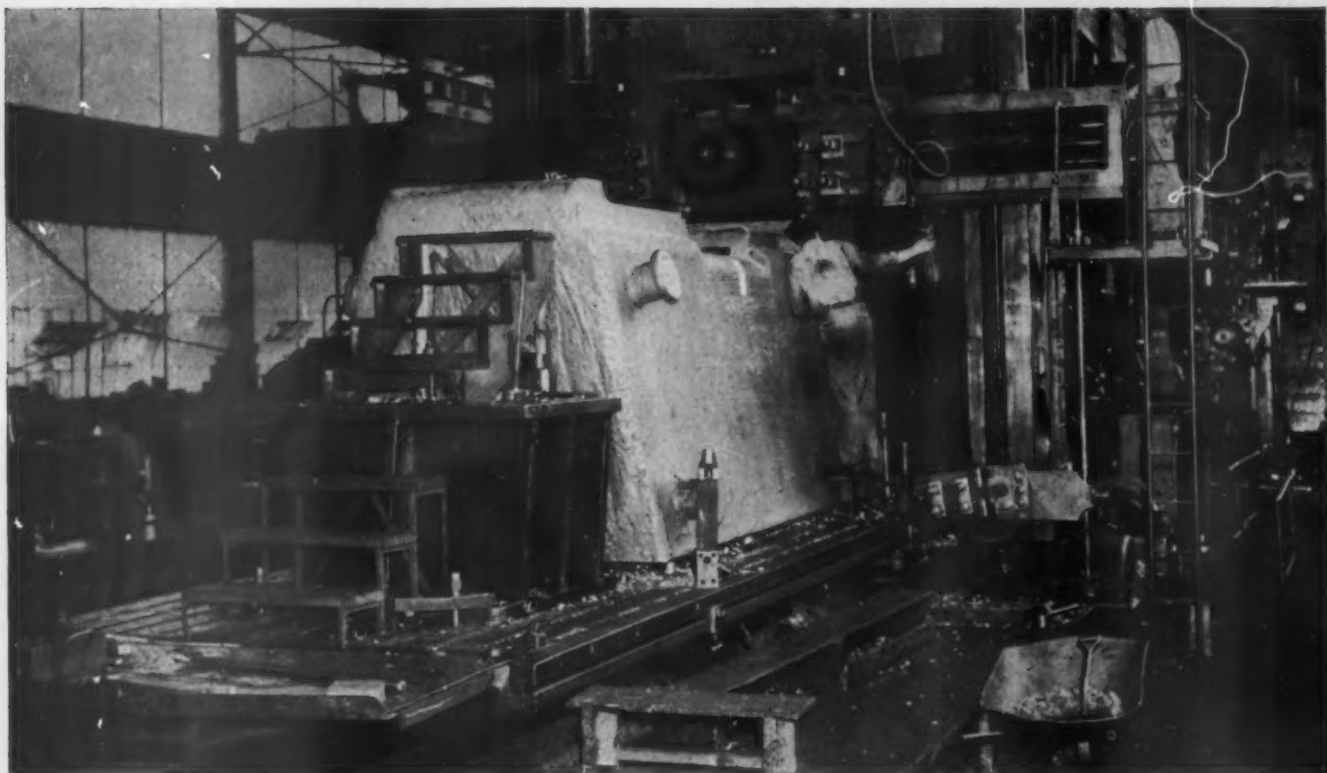
Torrington, Conn.

• South Bend 21, Ind.

District Offices and Distributors in Principal Cities of United States and Canada

**TORRINGTON *NEEDLE* BEARINGS**

NEEDLE • SPHERICAL ROLLER • TAPERED ROLLER • STRAIGHT ROLLER • BALL • NEEDLE ROLLERS



## FULLY MACHINED LARGE and HEAVY STEEL CASTINGS

### *Typical* CONTINENTAL EQUIPMENT

Planers up to  
15' x 36'

Lathes up to 84"  
Horizontal Boring  
Mills up to  
7" spindle dia.

Boring Bars up to  
30" dia.

Boring Mills up to  
23' dia.

Small and  
Medium Sized  
Machine Tools  
Modern Tool Room  
Facilities  
Erecting Floor  
60' x 300'

Some of the largest precision machine tool equipment in the world serves your finished machining needs at CONTINENTAL. The necessity of inter-plant shipping to accommodate machining requirements is eliminated at Continental. You get the complete job from this single, reliable source. For *complete* casting service from founding to finish . . . look to Continental.

# Continental

FOUNDRY & MACHINE CO.  
CHICAGO • PITTSBURGH

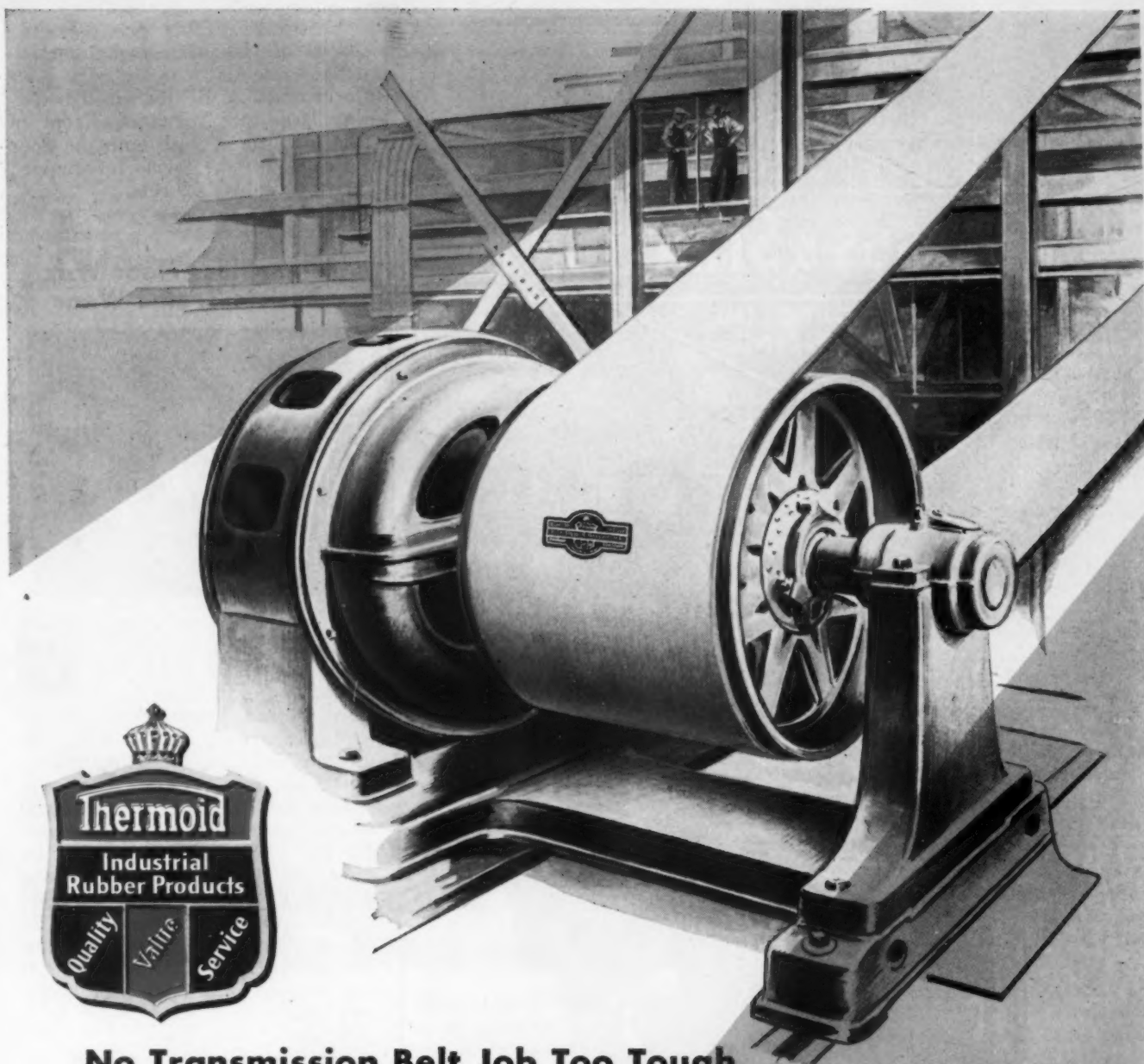
Plants at E. Chicago, Ind. • Wheeling, W. Va. • Pittsburgh, Pa.



CASTINGS: Carbon and Alloy Steel; from 20 to 250,000 pounds.

ROLLS: Iron, Alloy Iron and Steel; for All Types of Rolling Mills.

MILLS: Complete Rolling Mill Installations and Auxiliary Equipment.



## No Transmission Belt Job Too Tough ... For Thermoid

Have you some really tough transmission jobs—regular belt killers? They won't be too tough for a Thermoid Transmission Belt. Let your Thermoid Distributor prove that by furnishing exactly the right belt for your job.

For general service he will offer "400", the all-purpose belt that will satisfactorily service all normal operating requirements.

For severe service, or for high speeds with small pulleys, he will recommend Thermoid High Speed "R", made with extra strong, hard 35-oz. duck and top grade rubber. Where there are oil or fumes injurious to rubber, he will recommend Thermoid High Speed "N", with Neoprene friction and skim. Each type is practically custom-built for the service for which it is recommended.

Here's The Book That  
Will Answer Many of  
Your Questions



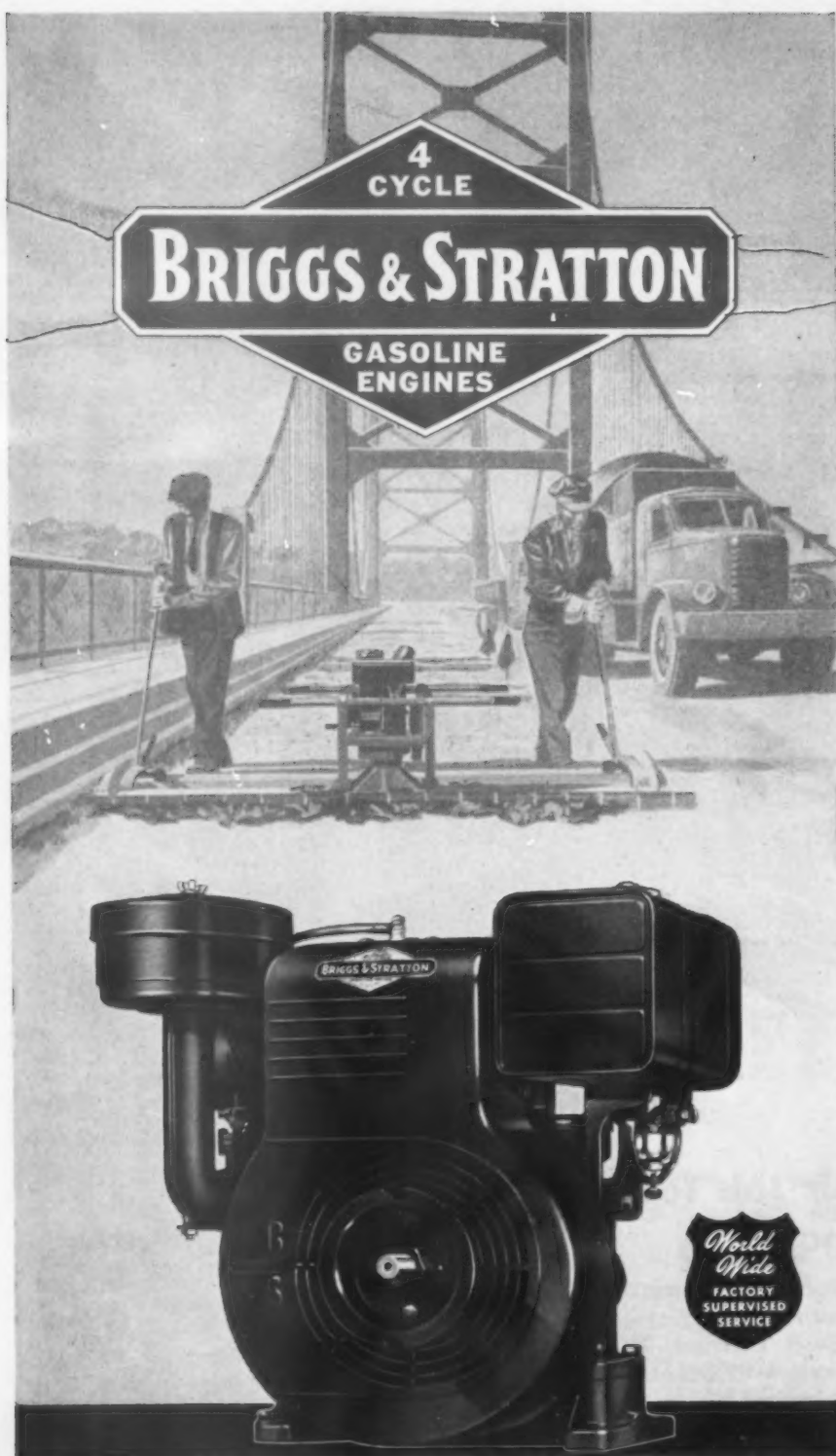
Ask for your free copy of Technical Bulletin No. 3678. It contains practical information, charts, tables and diagrams which will help you select the right transmission belt for your requirements.

Conveyor & Elevator Belting • Transmission Belting  
F.H.P. & Multiple V-Belts • Wrapped & Molded Hose

# Thermoid

Rubber Sheet Packings • Molded Products  
Industrial Brake Linings and Friction Materials

Thermoid Company • Offices & Factories: Trenton, N. J., Nephi, Utah



Preferred power for concrete vibrators and a wide range of other road-building and maintenance equipment — the world's most widely used single-cylinder gasoline engines on machines, tools, appliances for industry, construction, railroads, oil fields, and on equipment for farm and home.

**Y**ou buy with confidence when machines, tools, and appliances are powered by Briggs & Stratton — the recognized leader in single-cylinder, 4-cycle, air-cooled gasoline engines.

Briggs & Stratton Corporation,  
Milwaukee 1, Wis., U. S. A.

In the automotive field Briggs & Stratton is the recognized leader and world's largest producer of locks, keys and related equipment.

(Continued from page 158)

capacity of 500 lbs. It will lift loads to tail-gate height of 54". The platform is 22" x 19" for accommodating large size packages. Front of the platform is flush with the floor when lowered. Truck is equipped with 8" rubber wheels.

No. 133 — Use Coupon on Page 128

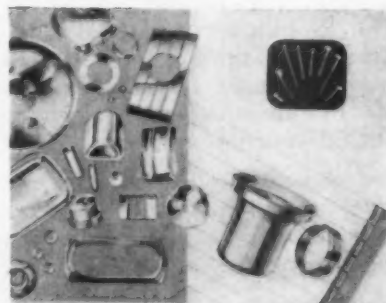
### High-Gloss Floor Wax Resists Traffic Wear



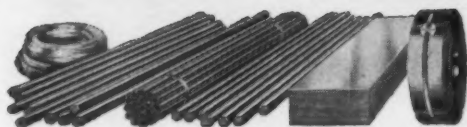
Westwax, a new floor maintenance product, is said to provide high gloss floor finish and at the same time give exceptional resistance to traffic wear. West Disinfecting Company, 42-16 West St., Long Island City, N. Y., the maker, points out that Westwax is a companion product to the well known Kwykwax, which is recommended for use when high gloss properties must be sacrificed to anti-skid qualities. Westwax is a water-soluble wax which dries within 20 minutes and leaves a high gloss finish without buffing or polishing. It can be used on all types of floors, and produces a hard luster with good anti-slip properties.

No. 134 — Use Coupon on Page 128

### New Copper Alloy Has Unusual Qualities



An unusual combination of physical and fabricating qualities is claimed by the American Brass Company for its copper alloy sheet, strip, wire, rod and tube made by the Formbrite process. Manufacture involves a special procedure of rolling or drawing and annealing (Please turn to page 164)

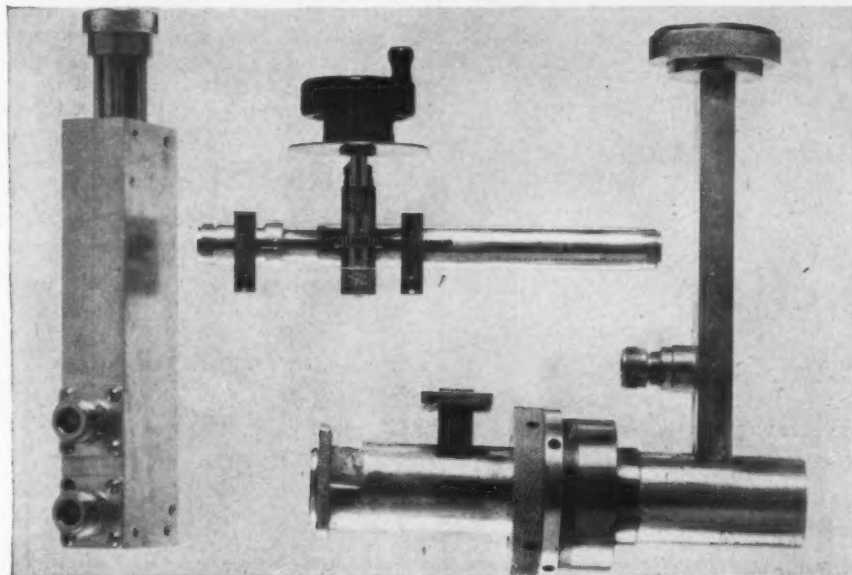


BRIDGEPORT BRASS COMPANY

# COPPER ALLOY BULLETIN



MILLS IN BRIDGEPORT, CONN. AND INDIANAPOLIS, IND.—IN CANADA: NORANDA COPPER AND BRASS LIMITED, MONTREAL



Various types of electronic components manufactured from brass: left, line stretcher; center, piston-type, cutoff attenuator; right, rotating joint. Diamond Manufacturing Co., Wakefield, Mass.

## Accuracy of Electronic Components Increased by Brass and Bronze

Copper-base alloys in rod, strip, sheet, wire and tube form are the backbone of the manufacture of electronic components such as crystal mixers, attenuators, rotating joints, line stretchers, antennas, R. F. coaxial connectors and numerous other items.

Accurate dimensions and highly polished surfaces are essential for microwave test equipment and plumbing components. Copper alloys can be both machined or drawn to these exacting demands.

### Plating Essential

All parts are either silver or gold plated for electrical conductivity and protection from corrosion. The majority of the copper alloys can be plated cleanly and with a minimum of work. They hold their plate for long periods of time without scaling.

All types of machining operations are necessary in producing this precision equipment. For example, the illustrated line stretcher is made up of a number of screw machine parts from free turning brass rod. The body is also rectangular rod of the same alloy. Drill-

ing, tapping, milling, polishing, plating, silver soldering are involved in producing this component.

Any type of corrosion changes the electrical characteristics of these units. Brass and bronze are both resistant to atmospheric corrosion. Some of these units are used in the open, especially those linking up antennas and in radar and other communication equipment.

### Close Fits Needed

On sliding parts and mating surfaces used as bearings, the parts must be fitted closely enough to eliminate any play which would affect the characteristics of the unit. This is also true of mating threads.

Spring contact units are made from phosphor bronze, grade A, to reduce wear and fatigue dangers.

Since plating is essential for protection purposes, mating parts in tubular construction are sometimes plated with nickel and chrome to obtain a better bearing with the silver plated part through the difference in the coefficient of friction.

## Brass Smooths Action of Resistor

Smooth action, ability to withstand wear and corrosion in all types of weather conditions, are essential in variable resistance units used in television, radio and other electronic work.

Copper-base alloys answer these demands. Through the excellent machinability of free cutting brass rod, the threaded guide bushing can be held accurately to take the shaft with a minimum of play. At the same time the leaded brass makes a good bearing surface for smooth action.

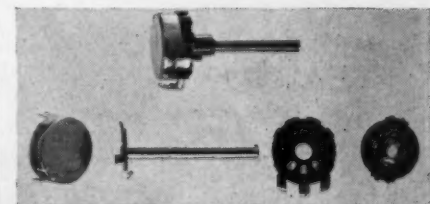
The bushing plate is leaded clock brass (62.25% copper, 2% lead and the remainder zinc). Clean blanking and piercing are possible with this alloy and in hard temper it has a tensile strength better than 70,000 psi.

Copper soldering terminal lugs are used both for conductivity and ease of tinning, and they are held into the body with hollow rivets made from cartridge brass, which has high ductility.

Both spring contact terminals, one which rides on the carbon impregnated resistance strip and the other against it, are made from phosphor bronze grade A (95% copper, 5% tin). This alloy has excellent spring characteristics and great resistance to fatigue from constant flexing.

A fixed pressure of the contact must be maintained on the resistance strip to insure a good electrical connection. Variations in this pressure would seriously affect the operation of the television, radio and similar electronic devices.

The shaft is also of free-cutting brass rod which simplifies the machining and the milling of the flat and tangs. (6154)



Variable resistor and component parts used in electronic work — Courtesy Clarostat Mfg. Co., Inc., Dover, N. H.

# Unusually Large Cap Screws—

(usually hard to find)

## are regular CLEVELAND

*Top Quality*  
production



For many years Cleveland has catalogued "larger than usually listed" sizes of hex head Cap Screws—stocks a fair assortment whenever possible—makes for you whatever you need up to 2½" diameter, lengths to 36". Also Set Screws to 1½" x 10". Clean, well-made screws, bright or heat treated. Write for sizes and prices.

**THE CLEVELAND CAP SCREW CO.**  
2917 East 79th Street, Cleveland 4, Ohio

Cleveland's standard line includes hex, flat, socket and fillister head Cap Screws; Milled Studs and Set Screws.



Warehouses: Chicago, Philadelphia, New York, Providence

## CLEVELAND *Top Quality* FASTENERS



(Continued from page 162)

brass containing 63% to 90% copper to obtain exceptionally fine grain-size (about .008 mm). American says the metal is stronger, harder and springier than ordinary drawing brass, yet retains remarkable ductility for deep drawing, forming and cold upsetting. It can be supplied equivalent to A.S.T.M. specifications for either quarter or half-hard stock. Surface is so smooth that a simple buffing operation produces a lustrous finish. Samples available from The American Brass Company, Waterbury 20, Conn.

No. 135 — Use Coupon on Page 128

### Fiber Strapping Overcomes Restrictions on Steel



Help for those shippers affected by NPA's Order M-59 restricting the use of steel strapping on packages less than 90 lbs. is offered by A. J. Gerrard & Co., 1950 N. Hawthorne Ave., Melrose Park, Ill. Gerrard's new Fiberstrap is a tough strapping that easily stands a pull of 275 lbs., retains its original tensile strength and ductility under normal conditions, and provides uniform tension. Reinforcement and protection of the product or parcel bound by Fiberstrap results from its uniform tensioning and sealing with a standard Steelbinder strapping tool. Gerrard says two years of testing have proven it practical for general binding operations where lightweight steel strapping had been used previously.

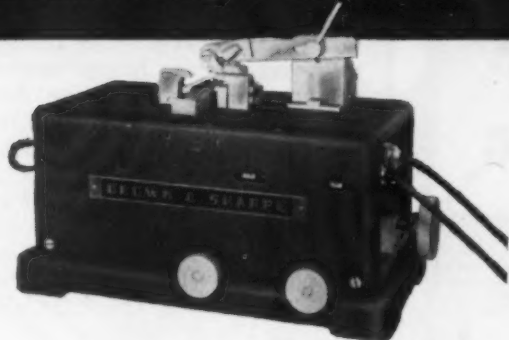
No. 136 — Use Coupon on Page 128

### Device Handles Bulky Loads Without Pallets

Clark Equipment Company calls its new lift truck accessory an "extra-heavy duty clamp" for handling heavy, bulky loads without use of pallets. It is more ruggedly built

(Please turn to page 166)

# Faster, Closer **QUALITY CONTROL**



Special gaging fixture made by Brown & Sharpe for inspecting dimensions, side parallelism, and side squareness of cutter blades. Employs 4 Gage Head Cartridges . . . used with 4 Amplifiers.



Electronic Amplifier No. 950.

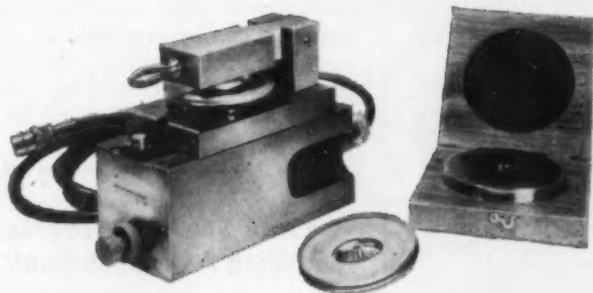
## Brown & Sharpe Electronic Amplifiers with built-to-order Gaging Fixtures

Here's an unbeatable set-up for fast, low-cost precision inspection or gaging of many small parts that usually demand high-skilled measurements. Special gaging fixtures, custom-built by Brown & Sharpe, can reduce exacting measurements to a simple, speedy routine.

Employing versatile Brown & Sharpe Gage Head Cartridges, these low-cost fixtures in combination with Brown & Sharpe Electronic Amplifiers provide flexibility that enables gaging to be done right at the machine or production line. Work is easily checked by .0001" to .00001", and measurements are visually magnified from 1800 to 18,000 times by the Amplifier . . . permitting operators to read "tenths", or finer, as easily as inches.

Investigate Brown & Sharpe Electronic Gaging Equipment for improving *your* quality control. It can be applied for gaging thickness, length, angle, parallelism, diameter, taper or combinations of several dimensions. For details write Brown & Sharpe Mfg. Co., Providence 1, R. I., U. S. A.

**WE URGE BUYING THROUGH THE DISTRIBUTOR**



Special gaging fixture, custom-made by Brown & Sharpe, permits gaging of meter valve plate flatness to .00001", when used with Brown & Sharpe Amplifier.



Custom-made fixture, employing Brown & Sharpe Gage Head Cartridge and one Amplifier, simultaneously measures major and minor I.D.'s of tapered bores and indicates accuracy of internal angle.

# **Brown & Sharpe**



# "Standard"

**Serves** Manufacturers Who Use  
All Shapes and Sizes of  
**MECHANICAL STEEL TUBING**

## SIZE AND THICKNESS CHART of Electric Weld Tubing for Mechanical Use

TUBE DIAMETER "O.D. SIZE	MAXIMUM WALL		MINIMUM WALL	
	DECIMAL	S. W. GAUGE	DECIMAL	S. W. GAUGE
1/2"	.065"	16	.028"	22
5/8"	.065"	16	.028"	22
3/4"	.065"	16	.028"	22
7/8"	.083"	14	.028"	22
1"	.109"	12	.028"	22
1-1/8"	.109"	12	.028"	22
1-1/4"	.134"	10	.028"	22
1-3/8"	.134"	10	.028"	22
1-1/2"	.148"	9	.035"	20
1-5/8"	.148"	9	.035"	20
1-3/4"	.165"	8	.035"	20
1-7/8"	.165"	8	.035"	20
2"	.180"	7	.035"	20
2-1/4"	.203"	6	.049"	18
2-1/2"	.203"	6	.049"	18
2-3/4"	.238"	4	.049"	18
3"	.238"	4	.049"	18
3-1/4"	.250"	3	.065"	16
3-1/2"	.250"	3	.065"	16
3-3/4"	.250"	3	.065"	16
3-7/8"	.250"	3	.065"	16
4"	.250"	3	.065"	16
4-1/4"	.250"	3	.065"	16
4-1/2"	.250"	3	.065"	16
4-3/4"	.250"	3	.065"	16
5"	.250"	3	.065"	16
5-1/2"	.250"	3	.065"	16

\*Intermediate sizes within the range indicated can also be manufactured. Please consult us for sizes not listed.



Manufacturers requiring tubing for precision or definite production prefer "Standard's" Electric Weld Steel Tubing for many reasons. "Standard's" Electric Weld is produced in one of the most versatile and complete mills of its kind in the world. "Standard's" 22 years of specialized tubing "know-

how", and monthly production of millions of feet of stainless and carbon steel tubing, a wide range of sizes and gauges, ensure you of utmost satisfaction. No problem of tolerance, precision or severest application for mechanical, structural, or pressure tubing is too difficult

STAINLESS STEEL TUBING  
1/4" to 2" O.D. . . . 3/16" to .075 wall

ABOVE CHART COVERS  
ROUND CARBON STEEL  
TUBING . . .

EQUIVALENT SQUARES,  
RECTANGULARS AND  
SPECIAL SHAPES ARE  
ALSO AVAILABLE.



(Continued from page 164)

than a previous similar device, with heavier slide arms and guides to permit increased arm travel. Clark says extensive tests have shown its practical suitability for handling bales, large boxes and crates and other extra heavy, bulky units able to withstand the heavy squeezing. Clamp arms can be extended from a minimum opening of 24" to a maximum opening of 95". Overall width of the clamp assembly with arms closed is 67". The unit is for use on Clark Utilitrac models up to 7000 lbs., and the Clark Yardlift-60, gas-powered 6000 lbs. model. Clark's Industrial Truck Division is at Battle Creek, Mich.

No. 137 - Use Coupon on Page 128

## Automatic Batch Counter Operates at High Speed



This instrument will give you continuous automatic counting of preselected batch quantities at high speed without interrupting production. The maker, Production Instrument Co., 708-14 W. Jackson Blvd., Chicago 6, Ill., says it will not miss a single count. The batch control switch may be used to start or stop electrically-operated machinery, conveyors, signals, knockout devices or other arrangements for marking or separating batches, warning operators, etc. Being electrically-operated, it will count any object or motion that can be arranged to operate a switch, relay, photo-electric unit or other circuit-breaking device. The counters are furnished in 2, 3, 4, and 5-digit models.

No. 138 - Use Coupon on Page 128

## Only Sheet Metal Nut With A Double Lock

Prestole Corporation, 1345 Miami St., Toledo, O., calls its Hex Lox Nut the only sheet metal nut with a double lock. It is described as having twice the tensile strength of ordinary spring nuts, and 70% lighter than conventional lock nuts. Prestole says Wright Field tests

(Please turn to page 168)



**A  
SAFE  
ARRIVAL**

**GAIR  
MULTICOLOR  
CARTONS**  
*Sell on Sight*

A great stimulus to impulse buying, so essential  
in today's SELF-SERVICE selling.  
Watch your sales and profits increase with

**GAIR CARTONS**

**YES! SAFE ARRIVAL**  
of your product in a  
**GAIR**  
**SHIPPING CONTAINER**  
is always a  
**BLESSED EVENT**

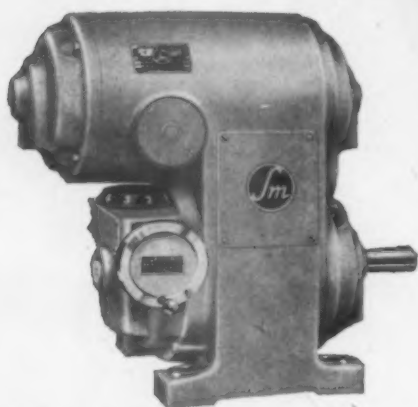
Because these outstanding corru-  
gated containers are built to with-  
stand the many hazards of shipping



**ROBERT GAIR COMPANY, INC.** 155 EAST 44th ST., NEW YORK • TORONTO  
PAPERBOARD • FOLDING CARTONS • SHIPPING CONTAINERS

# power modernization

lowers production costs...



Ask for your copy of pictorial bulletin No. C-70 showing Sterling Electric Power Drives Turning The Wheels of Industry.

with control of speed

## STERLING SPEED-TROL

... Gives You Variable Speed Control Necessary For:

- **PROCESS CONTROL OF:** Temperature—viscosity—level—pressure—flow—etc.
- **TIME CONTROL OF:** Baking—drying—heating—cooking—pasteurizing—soaking—chemical action—etc.
- **EQUIPMENT ADAPTATION TO:** Load variation—sequence synchronization. Size—tension—hardness or shape of materials to be processed—machined—conveyed—blended—mixed—etc.
- **VARIATIONS IN:** Quality—quantity—operators' abilities—etc.

# STERLING ELECTRIC MOTORS

Plants: New York 51, N. Y.; Los Angeles 22, California; Hamilton, Canada; Santiago, Chile  
Offices and distributors in all principal cities.

## SMALL STAMPINGS

ANY METAL, ANY QUANTITY  
30 years' experience gives us the "know how".  
Hundreds of satisfied customers are evidence of our high quality.

**THE MASTER PRODUCTS CO.**  
6400 PARK AVE. • CLEVELAND 5, OHIO

(Continued from page 166)

show the one-piece double section spring lock nut to have high installation torque, high prevailing torque,



and high back-off torque. The tests also showed it excellent in vibration tests and in tensile strength. It is made of SAE-1060 steel in thicknesses of .016 and .020, in the five most popular sizes for machine screws.

No. 139 — Use Coupon on Page 128

## High-Pressure Aspirating Air Diffusers



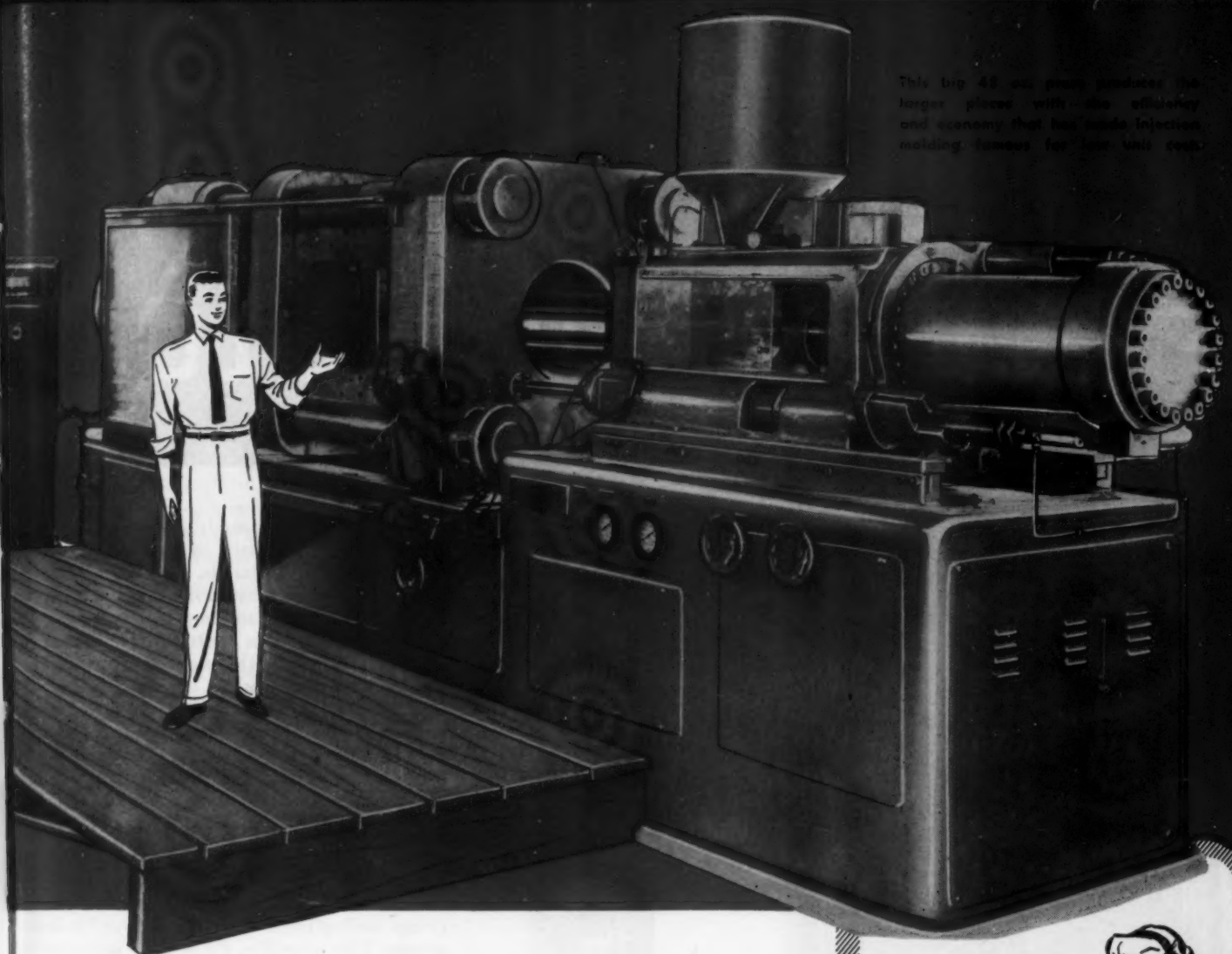
Anemostat Corporation of America, 10 E. 39th St., New York, N.Y., has a new line of high-pressure, aspirating air diffusers, Type HPW-1. The units are available in three capacities. They are pre-induction type units which induce room air, mix it with primary air in approximately equal proportions, and discharge the mixture through an aspirating air diffuser. For each 100 cfm of primary air, more than 200 cfm of total air is discharged by the unit due to the combined effects of induction and aspiration. The models can be used on air distribution systems which carry air at velocities up to 5000 fpm and static pressures up to 6 in. wg.

No. 140 — Use Coupon on Page 128

## Expands Line of NEMA Type C Face Mountings

Electro Machines, Inc., Cedarburg, Wis., maker of Doerr motors, has completed its line of NEMA type C face mountings for the stand-

(Please turn to page 172)



This big 48 oz. press produces the larger pieces with the efficiency and economy that has made injection molding famous for low unit cost.

## a "press-fit" at Aico cuts cost of injection molded plastics

Unused press capacity means a high unit cost. Aico avoids this waste to cut costs on all injection molding. Aico has a press to fit each job. A big one for a big job . . . a little one for a little job . . . Aico has at least one press that's just right to meet your design and delivery requirements when operated at its most efficient production rate, full capacity.

A fully equipped injection molding department, with presses from 2 to 48 oz. capacity, offers a plus value

you can't afford to miss. It provides you with a single source for a wide variety of injection molded parts. It offers the convenience and economy of working with a single supplier.

No other plastic molder has a more modern plant . . . a broader range of experience . . . to place at your disposal. Talk to Aico about your plastic problem. We'd appreciate the chance to be of service. There's no obligation . . . drop us a line today. Let Aico take over for you.

**AMERICAN INSULATOR CORPORATION**  
NEW FREEDOM, PENNSYLVANIA

Call AICO  
109 GLEN ROCK  
for . . .



**ENGINEERING COUNSEL** on proper molding methods and materials.

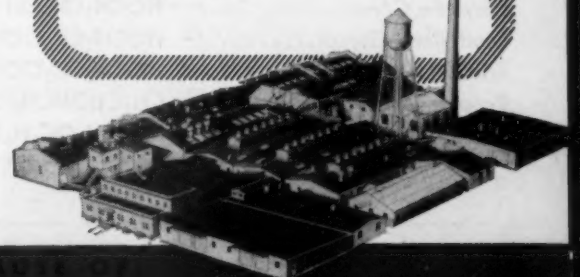
**MOLD BUILDING** to avoid division of responsibility.

**INJECTION MOLDING** for high rate of production . . . low unit cost.

**COMPRESSION MOLDING** of large parts with heavy cross sections.

**COLD MOLDING** of electrical parts requiring high heat resistance.

**LOW-PRESSURE MOLDING** . . . a relatively new development especially suitable for short runs of large, lightweight pieces.



MANY THINGS ARE BETTER BECAUSE OF  
**Aico** PRECISION MOLDED **plastics**

# FACTS about the GLYCOLS



In times of shortages, steady profitable production is frequently endangered by the inability to get the proper raw materials. However, complete information about the various applications of chemical raw materials may help you use the materials currently in short supply in the most profitable manner. Despite today's shortages, Dow is also interested in helping you conduct experimental work with the glycols. Further research today may suggest new uses for the glycols, new ways in which they can serve you in future markets. For more information and technical assistance, write Dow using the coupon below.

The chemistry of the Glycols centers around the two hydroxyl groups which characterize them as glycols. They are intermediate in their properties between the alcohols with their single hydroxyl group and glycerine with its three hydroxyl groups. Like glycerine, the glycols are normally quite stable in air. At high temperatures, they tend to oxidize in air, giving rise to a wide variety of oxidation products such as aldehydes and acids. This oxidation can be reduced by the use of inhibitors so that the glycols can be used as heat transfer media.

THE DOW CHEMICAL COMPANY  
MIDLAND, MICHIGAN

## Properties and Specifications of the Glycols

	Chemical Formula	Molecular Weight	Specific Gravity 25/25°C.	Freezing Point °F.	Boiling Point °F.	Flash Point °F.	
Ethylene Glycol.....	HOCH <sub>2</sub> CH <sub>2</sub> OH	62	1.112	7	390	241	2
Diethylene Glycol.....	HOCH <sub>2</sub> CH <sub>2</sub> OCH <sub>2</sub> CH <sub>2</sub> OH	106	1.116	15	475	275	2
Triethylene Glycol.....	HOCH <sub>2</sub> CH <sub>2</sub> OCH <sub>2</sub> CH <sub>2</sub> OCH <sub>2</sub> CH <sub>2</sub> OH	150	1.122	21	545	309	3
Propylene Glycol, Industrial.	CH <sub>3</sub> CHOHCH <sub>2</sub> OH	76	1.036	(-80)*	369	210	2
Dipropylene Glycol.....	HOC <sub>3</sub> H <sub>6</sub> OC <sub>3</sub> H <sub>6</sub> OH	134	1.025	(-54)*	446	244	2

### SPECIFICATIONS

\*Pour Point

	Specific Gravity @ 25/25°C.	Boiling Range 760 mm. Hg 5 to 95%	Acidity, Max. (As Acetic Acid)	Water Max.	Color Apha M
Ethylene Glycol.....	1.112-1.115	194-200°C.	0.01%	0.5%	15
Diethylene Glycol.....	1.115-1.118	240-250°C.	0.01%	0.2%	—
Triethylene Glycol.....	1.121-1.125	275-295°C.	0.01%	0.1%	60
Propylene Glycol, Industrial.	1.035-1.037	185-190°C.	0.005%	0.5%	10
Dipropylene Glycol.....	1.018-1.028	220-240°C.	0.01%	0.1%	20

This is No. 2 of a series of Dow advertisements you may wish to keep on file for reference and information. Write Dow for reprints.

## SOLVENTS:



Glycols can be used to excellent advantage with materials which must be formulated with water, but which are not soluble in water. In this manner, Glycols can be used in cutting oils (soluble oils), textile lubricants, dry cleaning soaps, and industrial hand soaps to name a few applications. Glycols are used in the preparation of hydraulic fluids because of their solution compatibility, and in steam-set printing ink where the resins are dissolved in Glycols and precipitated by water or steam to set the ink.

Besides acting as solvents, Glycols offer stability and practicality because of their low volatility, high flash point, and favorable viscosity characteristics. For a better solvent, investigate the future role that Glycols can play in your production.



## HUMECTANTS:

Is the "drying out" of your product cutting into profits? If so, consider the future job that Glycols can do for you. The ability of the Glycols to absorb moisture out of the air can be put to profitable use to secure: longer freshness for cigarette tobacco, baked goods and food; softening agents for paper; dehumidifiers for air and other gases; protection against the drying out of print pastes in textile processes. Glycols can also be added to sizes to prevent flaking. Be sure to start your experimental work with Glycols today if your materials are liable to excessive drying out.

*If you have a  
Glycols problem*

WRITE DOW FOR INFORMATION AND  
TECHNICAL ASSISTANCE.

## ANTIFREEZE AGENTS:



The Glycols are most well-known for their use in permanent-type automotive antifreeze, and they also give dependable protection to water-containing materials subject to low temperatures. Some common industrial examples are: water-base paints, cooling sprays, water-base hydraulic fluids, glass cleaners, de-icing compounds, cleaning compounds, sprinkling systems, radiant heating systems, and aircraft water supplies.

One of the family, Ethylene Glycol, is reacted with Nitric Acid to produce a lower freezing dynamite. Glycols can replace salt in cooling brines where they decrease the corrosion factor. Glycols added to gas well effluent prevent the water present from freezing on cooling when removing casing head gasoline.

## PLASTICIZERS:



For materials too brittle, Glycols are very effective as plasticizers. For example, by plasticizing the binder, Glycols add pliability and softness to composition cork sheets. They can be reacted with polybasic acids to give alkyd resins which are softer than corresponding ones made from glycerine. Other products which have been softened are moistureproof cellophane film, glues, some fibers and papers.

## OTHER USES:

There are many examples of the versatility of the Glycols. Ethylene Glycol, for instance, in conjunction with Boric Acid and Ammonia is widely used in the manufacture of radio, radar, and television condensers: it is also used as a mold release fluid for asphalt grave vaults. Propylene and Triethylene Glycol, in vapor form, have been used in the control of air-borne bacteria. And, in some cases, the Glycols can be used as lubricants. Be prepared for future markets . . . start your experimental work with Glycols.

The Dow Chemical Company, Dept. OC-10,  
Midland, Michigan

- ☐ Please send me additional literature about the glycols.  
☐ Please send \_\_\_\_\_ reprints of this advertisement.

Name \_\_\_\_\_ Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

**DOW**  
CHEMICALS  
INDISPENSABLE TO INDUSTRY  
AND AGRICULTURE

## For Lowest Rope Costs

### PLYMOUTH SHIP BRAND MANILA



REAL ROPE ECONOMY is not cost to buy, but cost to use. Plymouth SHIP BRAND Manila costs less to use because its tensile strength averages as much as 25% above published "minimums". This extra strength gives longer life under accepted safety practices and extra protection against accidental overloads. Play safe next time and specify Plymouth SHIP BRAND Manila—your best rope buy for any industrial job. Return coupon for helpful data.

**PLYMOUTH**  
*Cordage Products*



ROPE AND TYING TWINE FOR INDUSTRY

PLYMOUTH CORDAGE COMPANY  
380 Court Street, Plymouth, Massachusetts  
Send informative booklets and charts to help  
get more life from my ropes.

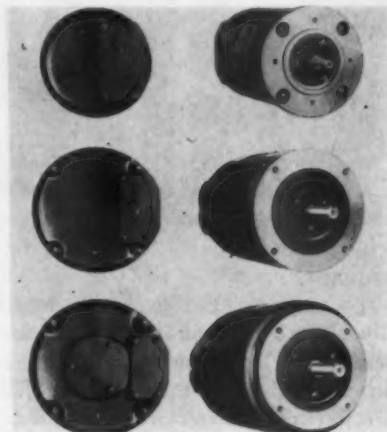
Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

(Continued from page 168)

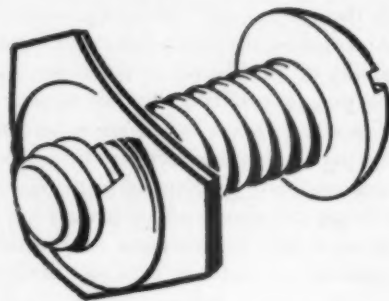
ardized 42, 56 and 66 fractional hp frame series. Front view in the illustration shows the streamlined, built-in conduit box which has



been carried through the design of all 3 frame sizes. The boxes were designed specifically to give adequate room for making the connections for 9-lead, dual-voltage motors normally used as standard equipment on coolant pumps and other machine tool applications. The conduit opening can be furnished with a  $\frac{7}{8}$ " plain hole or a  $\frac{1}{2}$ " pipe tap.

No. 141 — Use Coupon on Page 128

### Truarc Retainer Acts As Secure Self-Locking Nut



Waldes Kohinoor's newest retainer acts as an economical self-locking nut on threaded shafts. Designated Truarc series 5300, the triangular shaped retaining nut has a drawn helical segment with a tapered inner edge that forms a single thread conforming with American Standards. Screwed on a threaded shaft, the dished triangular body flattens under torque and secures an equal load distribution against the part being held. Separate washers are unnecessary. The retaining nut will remain secure under impacts and vibration. Bulletin No. 5 available from Truarc catalog service, Waldes Kohinoor, Inc., 47-16 Austel Place, Long Island City 1, N. Y.

No. 142 — Use Coupon on Page 128

# PURCHASING

JULY, 1951

## OFFICE EQUIPMENT and SUPPLIES



PURCHASING MAGAZINE — A CONOVER-MAST PUBLICATION  
205 EAST 42ND STREET, NEW YORK 17, N. Y.

# — Modernize —

## YOUR CATALOG AND BULLETIN FILES

Bring your source information up-to-date on new and improved office equipment and supplies by checking the latest trade literature listed on this page. This special office equipment section is in addition to the regular trade literature section on pages 19, 21, 22, and 24!

— When Writing to Manufacturers Direct, Please Mention **PURCHASING** Magazine. —

### Electric Stapler Saves Time And Cuts Costs

33. NEW bulletin describes the Bates electric stapler which automatically staples up to 20 sheets of medium weight paper. It is a material aid in collating jobs, and is a time and money saver in any 33. NEW bulletin describes the stapler, the sheets to be stapled touch a hair-trigger switch, and are automatically stapled. The stapler holds 5000 shots. Bates Company.

### Parcel Post Scale Shows Exact Postage

34. NEW Detecto Post-O-Meter increases mailing room efficiency. Place any size package on the scale platform, press a zone key, and the precise postage is shown in a single large figure. Only the one figure is shown, saving time, and eliminating mistakes. Bulletin gives

full information about this scale. Detecto Scales Inc.

### Low-Cost, Positive, Contact Print Copies

35. NEW copying machine using the Diazo process, is said to make copies so fast, so cheaply, and so easily that it eliminates much office paper work and makes definite economies possible. Known as the BW Copyflex, it is specifically designed to use this quick, clean, easy process anywhere in the office. In seconds it gives exact copies of anything typed, written, drawn, or line printed, supplying copies that are flat, dry and smudgeproof, ready for instant use. A copy 8½" x 11" in size averages under two cents for all costs, according to the maker. Bulletin tells how this new machine saves time and cuts costs. The Charles Bruning Co., Inc.

### For Printing Jobs that Demand Strength and Durability

36. WHITE SOREX is a paper stock providing quality appearance and long life at moderate price. Both White and Cream Sorex are of uniform thickness, and are particularly adaptable to letterpress and offset printing. It prints well and "can take it." It is recommended for factory forms, file cards, patterns, heavy envelopes, wall charts, maps, price tags, schedule cards, signs, folders, job envelopes, instruction manuals, small folding cartons and many other uses. Sample sheets are available from The Sorg Paper Co.

### Insulated Record Files

37. THREE- and four-drawer letter file sizes, especially designed to make certified fire protection conveniently accessible at the point where records are kept, are the subject of new folder No. 180-010, entitled "Insulated Record Files Protect Records at the Point of Use." The folder explains the endurance, explosion, impact tests to which samples were subjected in order to qualify for the Underwriters' Laboratories' Class "C" (1-hour) fire insulated safe label. Underwriters' "T-20" burglary label qualifies the files for a preferential 20% discount on burglary insurance premiums. Private lockers with key or combination locks can be substituted for standard file drawers. Herring-Hall-Marvin Safe Co.

### READER SERVICE COUPON

JULY, 1951

MAIL TO:  
PURCHASING—Reader Service Dept.  
205 East 42 Street  
New York 17, New York

Circle the numbers of the trade literature items you want.

33      34      35      36      37

Name..... Title.....

Company.....

Street Address.....

City..... Zone..... State.....



*Great* NAMES IN INDUSTRY

# Great DESK TOP EQUIPMENT

Quality, efficiency and years of dependable service have placed the Bert M. Morris Company foremost in the field of better Desk Top Equipment. Many famous users have their emblems imprinted in gold.



**MORRISET** — the constant-flowing, all-round writing implement that holds a full 2½ ounces of ink for months of writing without refill. Absolutely will not flood. Choice of five quickly replaceable "thread-in" points — extra fine, fine, medium, broad, stub.

**THERE IS NO SUBSTITUTE FOR QUALITY.** All Morris writing sets are equipped with iridium tipped points and each point is tested and approved at factory for writeability.



**BERT M. MORRIS CO. Desk Top Package Deals #100 and #200**  
Inquire about the surprisingly low cost of completely furnishing a desk with these items.

## STURDINESS • EFFICIENCY SMARTNESS

These are combined in the superior design of *all* Desk Top Equipment manufactured by **THE BERT M. MORRIS CO.**

The setting shown — pen set, memo pad, letter tray, ash tray, bookends and phone rest are a rich appointment to any desk — the stamp of an exacting, efficient executive. The complete setting retails for *little more than the cost of one higher priced — comparable fountain pen set.*



**FOUNTAIN PENS** — an efficient and economical pen set with "thread-in" point section. A real time and money saver in any office.



**BOOK ENDS** — at last — inexpensive book ends to match modern office furniture.



**MEMO PADS** — available in two types. With jeweler's bronze bar that drops as paper is used, or standard box style.



**LETTER TRAY** — strong two point suspension allows access from entire front and both sides. Tiers quickly added, legal or letter size.



**ASH TRAY** — A real He-Man ash tray. Glass lined, perfect for any desk or conference table.

**BERT M. MORRIS CO.** DEPT. P-1, 8651 WEST THIRD STREET—LOS ANGELES 48, CALIFORNIA

JULY, 1951

Please mention *PURCHASING Magazine* when writing to advertisers.

175

# Five-Plant Purchasing Control System

General Purchasing Agent, Moore Business Forms, Inc.


The Purchasing Department Control System, illustrated here, has successfully accomplished the coordination required.

Part #3—Yellow—is forwarded to originating section, or to one which the material will be delivered upon receipt by Receiving department. In the Engineering Department, for example, material would be internally delivered to the machine shop. Upon its receipt, the yellow copy of the requisition would be returned to the Engineering Department indicating that scheduling of the work might continue to the completion of the project.

## PURCHASING

The Purchasing Department will seek at least three competitive bids on an requisitioned items whose estimated value exceeds \$100.00.

This form has many advantages, i.e., one-time writing eliminates any possible errors when specifications are singularly contained in correspondence letter format—each bidder is basing his quotation on the same specifications; it eliminates voluminous files of correspondence and, reduces "price-seeking" preparation time, by the typist, as much as 66%.

REQUEST FOR QUOTATION		REMARKS		
* * *  * * *  * * *				
<div style="display: flex; align-items: center;"> <div style="flex: 1;"> <p style="margin: 0;"><b>MOORE BUSINESS FORMS, INC.</b></p> <p style="margin: 0;">3000 HIGHLAND AVENUE</p> </div> <div style="flex: 0.5; text-align: center;">  </div> <div style="flex: 1;"> <p style="margin: 0;"><i>Niagara Falls, N.Y.</i></p> </div> </div>		<p>REQUEST FOR QUOTATION</p> <p style="font-size: 1.2em; font-weight: bold;">THIS IS NOT</p> <p style="font-size: 1.2em; font-weight: bold;">AN ORDER</p>		
PLEASE QUOTE ON THE FOLLOWING ITEMS ▶ WE WILL CONSIDER SUBSTITUTE OFFERS				
QUANTITY	DESCRIPTION	UNIT PRICE	LESS DISC.	NET
<div style="display: flex; justify-content: space-between;"> <div> <p>WE QUOTE YOU AS ABOVE - P. O. NO. _____</p> <p>TERMS _____ DATE _____</p> <p>RETURN THIS QUOTATION TO PURCHASING DEPT. AT ABOVE ADDRESS</p> </div> <div> <p>SHIPMENT CAN BE MADE IN _____ DAYS FROM RECEIPT ORDER</p> <p>COMPANY QUOTING _____</p> <p>OFFICIAL SIGNATURE _____</p> </div> </div>				

0-224
EXCERPTED MOORE BUSINESS FORMS, INC. NIAGARA FALLS, N. Y.

<b>MOORE BUSINESS FORMS, INC.</b>  HIGHLAND AVE. PLANT • 3000 HIGHLAND AVENUE • Niagara Falls, N.Y.		THIS ORDER NO. MUST APPEAR ON ALL INVOICES PACKAGES, SHIPMENT PAPERS AND CORRESPONDENCE PURCHASE ORDER NO. F
<b>CONDITIONS</b>		
<p>Each invoice rendered must show your compliance with the Four Letter Standards by including the following certification on the face of the invoice. Seller represents that with respect to the production of the articles under the performance of the services covered by this invoice it has fully complied with the provisions of the Four Letter Standards set of 1938 as amended.</p> <p>This order shall not be filled at a price higher than last quoted without our authority.</p> <p>The right is reserved to cancel this order if not shipped within a reasonable time.</p> <p>Material furnished on this order which is not in accordance with our specifications will be returned at your expense.</p>		
PLEASE ENTER OUR ORDER FOR GOODS LISTED BELOW AND ACKNOWLEDGE AT ONCE ADVISING SHIPPING DATE ON ATTACHED ACKNOWLEDGMENT		
DATE TO BE DELIVERED	SHIP VIA	SHIP PREPAID
		TERMS
		DATE OF ORDER
QUANTITY	DESCRIPTION	PRICE
<div style="float: left; width: 60%;"> <b>SHIPPING INSTRUCTIONS</b>            CONSIGN RAIL FREIGHT SHIPMENTS TO SUSQUEHANNA, N. Y.            COMMON TRUCK, EXPRESS AND PARCEL POST SHIPMENTS TO 3000 HIGHLAND AVE., NIAGARA FALLS, N. Y.            NO SHIPMENTS ACCEPTED FOR DELIVERY ON SATURDAY, SUNDAY OR HOLIDAY.         </div> <div style="float: right; width: 35%;"> <b>MOORE BUSINESS FORMS, INC.</b>            3000 HIGHLAND AVE., NIAGARA FALLS, NEW YORK         </div> <div style="clear: both;"></div>		
<b>INVOICING INSTRUCTIONS - INVOICE IN TRIPLICATE</b> INVOICE AND BILL OF LADING SHOWING FULL ROUTING, CAR NO., ETC., SHALL BE MAILED AT TIME OF SHIPMENT TO 3000 HIGHLAND AVE., NIAGARA FALLS, N. Y. PLEASE ATTACH PRESENT BILL WHEN FREIGHT CHARGES APPEAR ON INVOICE.		
BY _____ PURCHASING AGENT		
IF SHIPPED TO 3000 HIGHLAND AVE., NIAGARA FALLS, N. Y. PLEASE ATTACH PRESENT BILL WHEN FREIGHT CHARGES APPEAR ON INVOICE.		
BY _____ PURCHASING AGENT		
ACCOUNT NO.	DEPT. NO.	DELIVER TO
		AUTHORIZED BY
		CUSTOMER INITIALS
<b>FOLLOW UP</b>	ACKNOWLEDGED	REMARKS

This is a seven part form.  
Part #1—Original Purchase Order  
sent to Vendor.

Part #2 — Purchasing Department  
Copy is filed alphabetically by vendor  
together with all pertinent papers in  
Visi record Purchase Control folder—  
(See Purchase Control folder, Page 178).

Part #3 — Purchasing Department cross reference numerical file.

Part #4—Using Department copy to acknowledge action taken on requisition.

Part #5—Receiving Department copy.

Part #6—General Purchasing Agent's control copy—forwarded to administrative offices.

Part #7—Vendor's Acknowledgment  
COPY.



# PAPER by SORG



*Tested by TIME!*

Year after year, millions of "Happy Birthday" greetings pass from friend to friend on the magic carpet of Sorg paper. For greeting card stock is still another of the hundreds of quality printing and special papers that the versatile Sorg papermakers have been producing for the past 99 years—to meet the paper needs of printers, converters and fabricators.

THE SORG PAPER COMPANY • Middletown, Ohio

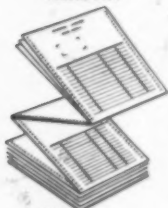
Manufacturers of Printing and Specialty Papers

SALES OFFICES AND REPRESENTATIVES IN

NEW YORK • BOSTON • PHILADELPHIA • CHICAGO  
ST. LOUIS • LOS ANGELES



Lithoset



Lithostrip



Lithofold

If this sounds impossible, you'll be pleasantly surprised to know that one girl using American Lithofold "Planned" business forms actually can produce double the output of two girls using two machines with old-fashioned record-keeping forms.

Whether your business is manufacturing, distributing, banking or transportation—if your company uses invoices, sales or shipping orders, voucher checks, credit memoranda, teletype or tabulating forms, purchase or manufacturing orders . . . American Lithofold "Planned" Business Forms can boost output and cut forms-handling costs 33% or more.

If you'd like to know how these savings can be effected in your organization, the coupon below will bring you a revealing brochure that shows how to eliminate wasted motion that digs deeply into company profits. A copy is yours for the asking.



**FREE!**

#### "4" STEP ANALYSIS

Covers all aspects, functions, design, construction and cost of present and proposed forms. Shows how to increase production and lower administrative costs in every department.

**WRITE TODAY!**

**AMERICAN LITHOFOLD CORP.**  
500 Bittner Street • St. Louis 15, Missouri

Gentlemen: Send me a **FREE** copy of the brochure that reveals how to get better results—in less time and at lower cost—through up-to-date business methods.

COMPANY NAME.....  
ADDRESS.....  
CITY.....ZONE.....STATE.....  
SIGNATURE.....

#### HANDY WALLET CARD SHOWS DAYLIGHT & STANDARD TIME

Wallet-size card available from F. H. McGraw & Co., 51 East 42nd Street, New York, N. Y., shows the type of time—daylight or standard, that is being observed in the cities and states throughout the country.

According to the card, eight states — California, Connecticut, Massachusetts, Nevada, New Hampshire, New Jersey, Oregon, Rhode Island and the District of Columbia—observe daylight time throughout by state law, while eight others—Delaware, Illinois, Indiana, Maine, Maryland, New York, Pennsylvania and Vermont—follow the daylight pattern with the exception of a few small towns.

Standard time is observed in 32 states with the exception of a few towns and cities. In Ohio—Cleveland, Akron, Youngstown and several smaller cities are on daylight time while Cincinnati and most other cities are on standard time. Of the ten largest cities in the U. S., only Detroit is on standard basis. In Canada, Montreal, Toronto, Ottawa and most other major cities are two exceptions to the general time pattern.

#### A.M.A. CREATES GENERAL MANAGEMENT DIVISION

The American Management Association recently announced the election of James D. Wise, president, Bigelow-Sanford Carpet Co., New York, to the newly created post of vice president for the General Management Division. General Management is the newest of AMA's eight divisions—which include also Personnel, Production, Office Management, Finance, Marketing, Insurance and Packaging,—and the election of a vice president marks the beginning of its formal organization.

#### DIEBOLD NAMES NEW PACIFIC COAST MANAGER

W. Rex Snavelly has been appointed Pacific Coast regional manager of the office records systems division of Diebold, Inc., Canton, O. Mr. Snavelly will supervise the operation of Diebold's Los Angeles, San Francisco and Seattle branches, in addition to his present duties as director of sales education and training of the company's 31 branches and 22 sub-branches.

(Please turn to page 182)

# Another **IBM** First... **ELECTRIC DECIMAL TABULATION!**



Here it is! IBM *Electric* Decimal Tabulation! Statistical typing is now as simple and fast as straight typing. Columns of figures from hundreds of millions down to cents can be typed more quickly and easily.

All the typist does is read the figure, touch a tab key, list the amount. Thousands

of extra motions are saved every day. The result is less expenditure of energy, less expenditure of money and time.

Hundreds of these machines are now in use across the country. Increasing deliveries are being made as rapidly as quality production permits.

**IBM**  
TRADE MARK

## Electric Typewriters

INTERNATIONAL BUSINESS MACHINES

IBM, Dept. PR-2  
590 Madison Ave., New York 22, N. Y.

Please send me your booklet on  
*Electric Decimal Tabulation.*

Name

Company

Address

City  State

Read what they say  
about the

# LIGHT TOUCH LEAD



"Posting figures all day takes less effort with Mongol Pencils" ...states Ethel A. O'Neil, Bookkeeper, Port Angeles, Wash.



"I specify Mongol Pencils for this office because I find they help make paper work easier" ...asserts Buyer George W. Long, Euclid, Ohio.



"Effortless writing Mongols is what I call them, they're so smooth" ...says Norman Schroeder, Payroll Chief, Ypsilanti, Mich.

What's their preference after writing all day? MONGOL Pencils! For smoothness...strength...longer wear. If your office isn't using world-famous Mongols yet, specify them now!

...it's the  
**LIGHT TOUCH LEAD**  
that does it!

# MONGOL

by **EBERHARD FABER**

TRADE MARKS REG. U. S. PAT. OFF.

## NEW B & P REPRESENTATIVE

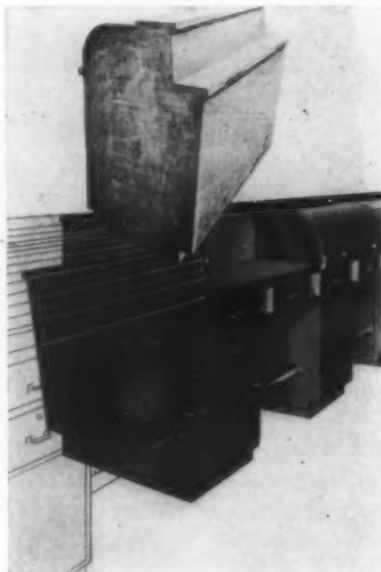
Carl A. Penning has been appointed to the sales staff of Boorum & Pease Company. He is now traveling the Iowa, Nebraska and South Dakota territory formerly covered by George Lazier.

## OLD TOWN NAMES WILSON HEAD OF CHICAGO OFFICE

Old Town Corporation has appointed A. W. Wilson branch manager for its Chicago office. He will supervise distribution of the company's liquid process duplicating machines, accessories and duplicating supplies, carbon paper, and inked ribbons.

## COMBINATION COUNTER UNITS EASILY INSTALLED

Herring-Hall-Marvin Safe Co., Hamilton, O., has announced 2-in-1 counter units, combining lobby fixture with under-counter equipment, that offer flexibility and economy for both large and small installations.



Installation is said to be like placing desks in an office. The units are placed in position on the floor and anchored together. All work is done under one contract instead of under separate contracts for fixture and under-counter work. Subsequent additions and re-arrangements can be handled easily and economically.

The units are furnished in sizes that can be fitted to most floor plans on new and remodeling jobs. Fixture and under-counter equipment are made of furniture stock steel, finished to specifications. Composition tops on the counter and ledge are bound in stainless steel.

## "We Always Order SEA FOAM BOND

—it Answers All Our  
Thin Paper Needs!"



# SEA FOAM BOND

## America's Favorite *Sightweight* Business Paper

### Here's Why—

★ **EFFICIENCY.** Crisp, tough-fibred Sea Foam meets all thin paper needs (multiple forms and copies, stuffers, air-mail letterheads) and standardizes record and communication systems. A bear for hard wear and erasure, it's got stand-up stamina for filing.

★ **ECONOMY.** Thin, top-quality Sea Foam gives extra sheets per pound, reduces postage—a real miser on precious file space.

★ **SPEED.** Cuts copying time to the bone with many legible carbons. 7 bright colors make for quick, accurate routing.

### Write for SEA FOAM'S Free Test Kit



Demonstrates how Sea Foam fills the bill for all thin paper needs. On your company letterhead, please.

**BROWNVILLE PAPER COMPANY**  
The Mill of Fine Lightweight Papers  
33 Bridge St., Brownville, N. Y.

# LEDGER POSTING MODEL OF COLLATING WRITING BOARD

The McBee Company, Athens, Ohio, has released a new ledger posting model of its Collating Writing Board.

The new "poster" permits posting of a ledger account, journal record and statement at one operation. It incorporates an added automatic "open throat" feature which lifts the journal and its carbon away from the posting surface so that the ledger card can be inserted easily and instantly. As the ledger card slides into posting position, the "open throat" closes and the records are ready to receive the posting.

The Ledger Posting Writing Board is offered in two sizes, 17½" x 15" and 14" x 11", to accommodate a wide variety of ledger sizes.

## NEW DEVELOPMENTS IN FACSIMILE RECORDING PAPERS

A number of promising developments in facsimile recording papers are discussed in a report now available to the public, according to the Office of Technical Services of the U. S. Department of Commerce.

The primary purpose of the study made by the Timefax Corporation under Signal Corps contract was to survey the possible methods of making direct daylight facsimile recording papers, preferably of the dry recording type. In the course of the work one new paper was developed and two papers were improved to the point of becoming commercially practical. Papers discussed include the Mimeograph Stencil, Non-Duplicating Recording Paper, Timefax Duplicating Paper and Pressure and Heat-Sensitive Paper.

Detailed tables are presented covering the properties of some colloidal carbons, (electrical conductivity, pH, carbon content and particle size); the resistance of base and intermediate coatings; a partial list of pigments and binders examined for base and intermediate coating combinations; and a partial list of pigments and related substances used in top coatings.

The report concludes with suggestions for further development in the field, and a supplementary list of facsimile recording paper and related patents.

PB 102317, *Final Report of the Investigation and Development of Facsimile Recording Paper* 15 pages, sells for \$1.75 per copy in microfilm, \$2.50 in photostat. Orders

(Please turn to page 184)



*really*  
**WHERE PRODUCTION COUNTS...TYPING IS ELECTRIC**  
and the typewriter used is the Remington



*Electri-conomy*

Yes, American Industry has discovered that Remington Electri-conomy Typewriters can turn out *more work, better work in less time and with less effort* . . . so essential in these critical days that call for peak output in the office to assure peak production in the plant.

Vital records, accurate statistics, multiple reports, legible carbon copies, distinctive correspondence—these and many others are prepared swiftly . . . and with electric ease with this magnificent new electric typewriter. Mail the coupon below for the amazing economy story.

**Remington Rand**

**THE FIRST NAME**

**IN TYPEWRITERS**

Remington Rand, Room 2153, 315 Fourth Avenue, New York 10, N. Y.

- ☐ Yes, I would like a FREE copy of folder RE 8353 describing the new Electri-conomy.  
☐ I would like FREE Electri-conomy Test in my office—without obligation of course.

Name

Company

Address

City  Zone  State

Now I put my  
best foot  
forward



I never thought that the appearance of my office mattered very much; but one day a Security dealer . . . very nice fellow, by the way . . . convinced me to buy just one CRESTLINE Desk and watch the results. Last month one of my best clients remarked: "Say, Jim, very nice office . . . mighty pleasant place to do business." Now our whole office is equipped with CRESTLINE. Putting your best foot forward pays dividends . . . and your best foot office-wise is CRESTLINE.

*Crest*  **LINE**

SECURITY STEEL EQUIPMENT CORP.  
AVENEL, NEW JERSEY



(Continued from page 183)

should be addressed to the Library of Congress, Photoduplication Service, Publication Board Project, Washington 25, D. C. accompanied by check or money order payable to the Librarian of Congress.

#### NEW PERMAPOINT PEN FOR OFFICE USE

New fountain pen for office use, styled the Permapoint, iridium tipped for years of wear, is being introduced by the Eberhard Faber Co., 37 Greenpoint Avenue, Brooklyn, N. Y. The pen writes instantly, and its double-seal design keeps the



ink from drying out. It will use all of the newly developed special fountain pen inks, and points are available in five writing styles from extra-fine to extra-broad. Matching Permapoint mechanical pencils are also available.

#### DISTRICT MANAGER APPOINTMENTS BY OLD TOWN

Old Town Ribbon & Carbon Corporation, Brooklyn, N. Y., recently announced the appointment of E. C. Talbert as district manager for the Ohio-Michigan Territory, with headquarters in Cincinnati; and the appointment of W. L. Martin, Jr., as district manager for the Carolina-Georgia area, with headquarters in Charlotte, N. C.

#### OFFICE MANAGER CAN TEST EMPLOYEES' APTITUDES

A new and improved edition of the Martin packaged aptitude testing program is now available to office managers to aid them in making the best use of their employees' abilities. This is believed to be the only completely packaged program which can be effectively used by the average office manager without consultation with high-priced specialists. It is said to be useful whether intended for a firm of thousands of employees, or for an insurance agent with a one-girl office.

Users of the testing kit report many instances in which a girl who

wasn't making the grade on her job was given duties more in line with her aptitudes as a result of the tests. On the new job she was a happier, more productive employee.

The aptitude program is the outgrowth of research conducted by Howard G. Martin, an industrial psychologist during 1947 and 1948. Use of the tests showed that definite patterns of scores could be identified for various kinds of office jobs. Upon completion of these studies, the way was clear for the preparation and national distribution in 1949 of a complete aptitude program which would enable an office manager, unfamiliar with testing, to use tests effectively in placing office workers without the expense of consulting industrial psychologists.

Information can be obtained from the Martin Publishing Company, 690 Market St., San Francisco, Cal.

♦ ♦ ♦

#### ROYAL NAMES NEW MANAGERS

The following managerial changes have been announced by Royal Typewriter Co., Inc., New York, N. Y.:

Charles D. Sparwasser, formerly manager of the Harrisburg branch, has been named manager of the Baltimore office; George Rafter, formerly assistant manager at Pittsburgh has been named as district manager at the Harrisburg branch; former Cleveland salesman Edward Sandels has been chosen to manage the Fort Wayne office.

♦ ♦ ♦

#### NON-STICKY CLEANER REMOVES INKS FROM HANDS



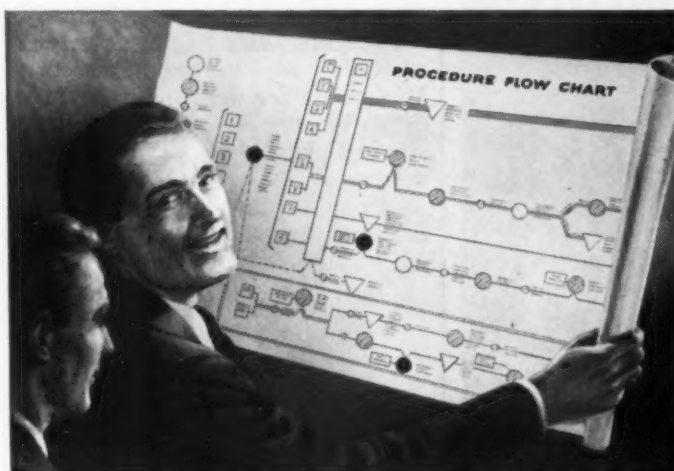
Stains from ball point pens, spirit and hectograph machines, mimeograph machines and typewriter ribbons can be removed quickly and without the use of water with Webster's O.K. hand cleaner. The cleaner, which can be used right at the desk, is not greasy and leaves no sticky feeling. Made by F. S. Webster Co., 1 Amherst St., Cambridge 42, Mass.

(Please turn to page 186)

## IDEAS FOR SHIPPING ORDERS FASTER

Standard Register

# Paperwork Simplification



Customer's name, full details, on request.

**ANTICIPATING** a rising volume of orders, a midwest furniture manufacturer welcomed the continuing service of Standard's representative in *re-study* of a key record system—a system which itself had "greatly reduced the paperwork required" a few years before. The striking outcome of thorough A,B,C analysis, (outlined below) is fully described in PS. 18\* . . .

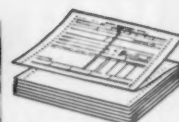
**A. Develop the best procedure.** Tabulating department immediately originates order-booking, shipping & invoice forms, freeing Shipping of paperwork delays.

**B. Simplify the writing method.** Shipping typist easily reoperates tabulated 8-part Kant-Slip form on typewriter also equipped with pinfeed platen, to add several entries only.

**C. Design the most efficient form.** Half the total number of copies written before, now convey information better.

*Paperwork Simplification* is being directed today to helping our customers get the most out of their Standard Register systems. Representatives, analysts, form designers, servicemen are *re-examining* systems . . . against today's requirements . . . with the above three basic objectives.

\* "PS." ideas and information are available to all. Write for recent issues of *Paperwork Simplification* magazine. The Standard Register Co., 407 Campbell St., Dayton 1, Ohio.



KANT-SLIP  
continuous forms

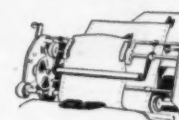


Feeding-aligning device:  
THE REGISTRATOR  
PLATEN

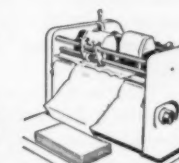


AUTOMATIC LINE  
FINDER

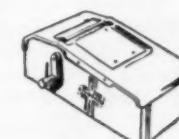
Advances form into  
new writing position  
in one motion



DUAL FEED  
Registers 2 different  
forms for 1 continuous  
typing operation



BURSTER-IMPRINTERS.  
Sign, date, number,  
trim, tear off, stack  
Kant-Slip forms



FORM-FLOW  
REGISTERS  
Better records  
... by hand



UNIT ZIPSET FORMS  
Carbon interleaved



## How to have an efficient MAIL ROOM for only a few dollars!



Send for this illustrated catalog today!

Corbin Mail Handling Equipment is used in the majority of post offices throughout the country . . . It is speeding up the mail sorting operation in mail rooms of many nationally-known business firms, schools and hospitals.

You, too, can have efficient Corbin Mail Handling Equipment in your office. You get equipment that is sturdily and attractively made from selected hardwoods. You get the benefit of our years of experience, because we will gladly help you choose equipment that meets your needs exactly. Yet, the cost is surprisingly low!

For more complete details on Corbin Mail Handling Equipment and other low-cost Corbin wood products, write today for our new illustrated catalog! There is no obligation, of course.



PS

Corbin Cabinet Lock — Wood Products Division  
The American Hardware Corporation  
New Britain, Conn.

Please send me your new illustrated catalog of  
Corbin Mail Handling Equipment and other  
Corbin Wood Products.

Name .....

Firm .....

Address .....

### PEN-INK UNIT OFFERS SUBSTANTIAL SAVINGS

Through extensive tests involving the use of fountain pens it has been found that 4,000 seconds of valuable time will be saved in the use of one reservoir of ink in a Morriset perpetual flowing pen-ink unit. The Bert M. Morris Company, 8651 West Third St., Los Angeles 48, Calif., says the tests show that 40 seconds are used by an average employee to fill even the most simple fountain pen. The Morriset will supply more than enough ink to fill an average fountain pen 100 times yet requires no service.



It is also pointed out that one quart of ink will write as much copy as six gross of wood case lead pencils, including the waste in sharpening. Installation of the sets by major users are said to have caused a drastic drop in lead pencil use.

The set has no sac, filler or other moving parts which will get out of order. Points that wear out or become damaged can be replaced easily. Nothing else needs regular service.

### NEW PRE-SENSITIZED PHOTO-OFFSET PLATE

A new pre-sensitized photo-offset plate—for use on Multilith and Davidson presses—was recently announced by Minnesota Mining and Manufacturing Co., 900 Fauquier St., St. Paul, Minn.

The new plate — "3M" brand Sensitized Aluminum Photo-Offset Plate — is pre-sensitized and ready for exposure without further treatment, the company stated. The plates are .005-inch-thick aluminum. They have zero stretch, it was pointed out. Advantages cited for the plate include:

1. Fine quality reproduction on small photo-offset presses — halftone screens up to 300-lines will reproduce perfectly.
2. Sharper copy — halftone dots, and lines, are sharper due to the

*stands up  
under pressure*



An Omega lead takes a lot of pressure without breaking . . . thin, lead holds a needle point, makes clean, sharp figures with lightest pressure. 24 brilliant colors, ends colored for quick selection. Ask for sample on your business letterhead.



The Omega is a Tryxex Pencil — shaped to fit your hand — will not roll.

RICHARD BEST PENCIL CO.  
Dept. P Springfield, N. J.

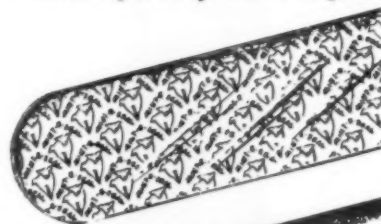
**OMEGA**  
COLORED PENCILS

Makers of  
ROYAL SCOT and FUTURA Pencils

*No Peek*

ION CO.  
USSETTS

.. and opacity envelopes



use SHEPPARD light-weight Air Mail and Commercial styles.

**Sheppard**



**ENVELOPE CO.**  
1 Envelope Terrace  
Worcester 4, Mass.

plate's grainless surface. Lower-case letters one-fourth the size of 6-pt. type have open "o's" and "e's".

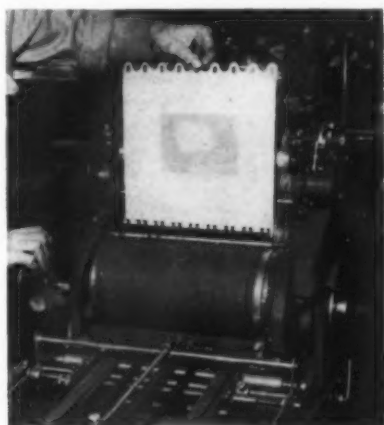
3. Handling speed — 5 minutes from package to press as against longer periods needed to ready conventional grained plates for the press.

4. Minimum equipment needed—no graining or whirling equipment, or shelf of chemicals.

5. Ease of handling — a single demonstration enables a plate maker to produce excellent plates.

6. Cleaner copy — the plate's specially coated surface is "far less susceptible to scumming".

7. Blacker copy — less moisture is carried on the surface of the plate, so there is less tendency to emulsify the printing ink and develop grayness in the copy.



8. Easily corrected — minor deletions and additions can be made.

9. Accurate register — 100% accuracy, subject only to the limitations of the press and the operator.

The new plates are made in two sizes: A 10- by 15 $\frac{3}{8}$ -inch serrated plate for use on the No. 1250 Multilith press; and, a 10- by 16-inch straight-cut plate for use on Davidson presses. They are available nationally from photo-offset and duplicating supply dealers.

#### TOM DUNN BECOMES FUL-VU SALES MANAGER

Cooks' Inc., Camden, N. J., manufacturers of Ful-Vu transparent "window sleeve" albums, binders and displays, has announced the appointment of Thomas A. Dunn as sales manager. Mr. Dunn has been associated with Cooks' Inc. for several years and has had broad previous experience in the stationery, photo supply and related fields. He will make his headquarters at the company's home office in Camden.

(Please turn to page 188)

Only half done  
yet my whole day's  
gone!

That's how it is when your typists have to use *ordinary* business forms.

They *work* hard, sure, but waste half their time inserting carbons, aligning copies, *recopying* . . . doing things they shouldn't!

### UARCO Multi-Linkt Forms give you back this wasted time!

They come ready to write. Carbons pre-set. Copies in right order. All aligned. Your girls just type—form after form from packs of 500 that feed themselves into the typewriters.

Easy handling is another help: form units detach from the pack into convenient E-Z-Out sets; carbons in place for later entries if needed. One quick motion deleaves them. Distribution is *fast* with copies for all, by color.

Let Uarco Multi-Linkt Forms turn *your* half girls into one hundred per cent producers! A few minutes with a Uarco Representative will show you how they can. Call him. There's no obligation, at all.



**UARCO**  
INCORPORATED

#### Business Forms

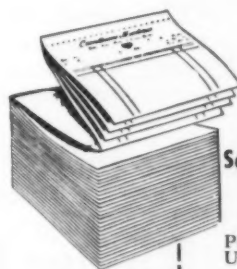
Factories: Chicago; Cleveland; Oakland;  
Deep River, Connecticut; Watseka, Illinois  
Sales Representatives in All Principal Cities

#### Send for these time and money saving forms

UARCO Incorporated  
Room 1619, 141 West Jackson Blvd.  
Chicago 4, Illinois

Please send me, without charge, samples of  
UARCO Multi-Linkt Forms.

Name.....  
Company.....  
Address.....  
City.....State.....



# MOORE BUSINESS FORMS, Inc.

## RECEIVING REPORT

8002

SHIPPER \_\_\_\_\_

ADDRESS \_\_\_\_\_

DATE RECEIVED \_\_\_\_\_ 195 \_\_\_\_\_ PURCHASE ORDER NO. \_\_\_\_\_

ARRIVED VIA \_\_\_\_\_ PURCH. DEPT. VERIFICATION \_\_\_\_\_

WEIGHT \_\_\_\_\_ CHARGES \_\_\_\_\_ ACCOUNT POSTED \_\_\_\_\_

CAR NO. \_\_\_\_\_ DATE \_\_\_\_\_ BY \_\_\_\_\_

QUANTITY	SIZE	DESCRIPTION OF MATERIAL	NET WEIGHT

RECEIVED BY \_\_\_\_\_

DELIVERED FOR CHECKING TO \_\_\_\_\_

(Continued from page 178)

### RECEIVING REPORT

This a four part Flatpakit form 5½" x 8½".

Part #1—to Purchasing Department.

Parts #2 and #3—to Requisitioning Department together with material. Following material inspection the using department acknowledges acceptance of material and forwards part #2 to Purchasing Department.

Part #4 is retained in Receiving Department as reference file.

### NEW ONE-COAT HEAT-RESISTANT LACQUER

A new one-coat, heat-resistant lacquer, C 5173, has been introduced by the United Lacquer Manufacturing Corporation, of 1001 W. Elizabeth Ave., Linden, N. J.

The new lacquer, developed originally for finishing lamps, and stage and photographic lighting apparatus, may be used wherever temperatures up to 300 degrees are encountered.

In this temperature range, the lacquer provides excellent color retention and resistance to cracking or peeling.

C 5173 may be applied by spraying in a single coat, giving excellent adhesion to all metals, including steel, and aluminum. The lacquer air dries in 15 minutes.

It is available in all colors, in flats, semi-gloss and gloss.

...For  
letterheads of  
distinction  
and quality



### IT ISN'T SURPRISING—THAT PRINTERS SAY RISING!

If you have a stationery problem take it to your printer. He handles paper every day and can solve your problem with one word—Rising.

He knows how this superb paper acts under all conditions. And will unhesitatingly recommend Rising Bond for letterheads and forms.

### Rising Bond

- is 25% rag
- comes in 4 weights
- is available in white and 5 colors
- has envelopes in 6 sizes
- And has an excellent printing surface for engraving, lithography, gravure or letterpress

WHEN YOU WANT TO KNOW  
...GO TO AN EXPERT!

## Rising Papers

ASK YOUR PRINTER

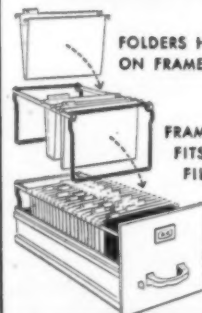
...HE KNOWS PAPER

Rising Paper Company, Housatonic, Mass.

Worried about  
the fire that smoulders?  
Put it out  
with PENDAFLEX folders!



**Oxford**  
**PENDAFLEX®**  
HANGING FOLDERS



FOLDERS HANG  
ON FRAME

FRAME  
FITS IN  
FILE DRAWER

CUTS FILING  
COSTS

**20%**  
OR MORE!

INSTANT REFERENCE  
TO EVERY FOLDER!

OXFORD FILING SUPPLY CO., INC.  
Clinton Road, Garden City, N. Y.

**UNDERWOOD PRESENTS  
NEW ACCOUNTING MACHINE**

A new accounting machine for posting accounts receivable with original statement and original ledger has been introduced by Underwood Corporation, 1 Park Ave., New York, N. Y. Known as the Underwood Sundstrand Composite Model C-AR Accounting Machine, it is available in either single or double keyboard models.

The double keyboard Model C-AR is particularly designed for accounts receivable applications where original statements and original ledgers are required and where the date, folio and amount must appear on both statement and ledger. The single keyboard model is intended for use where no folio number is required or where the folio number is printed on only one form.



Manual operating effort has been reduced to a minimum. Forms are inserted in one fast simultaneous operation. The operator immediately enters the first old balance, then the folio and amount. When the motor bar is touched, the machine automatically prints the date, folio and amount on the statement, then prints the balance on the statement and in a rapid repeat operation, prints the entire entry in the proper columns on the ledger. Forms are completely visible at all times, and the old balance may be read without removing forms from the machine. The second old balance is read and entered as the carriage is returning. Forms are also removed while the machine completes the automatic carriage return and automatically prints proof of posting.

**OLD TOWN EXPANDING**

Old Town Corporation has started construction on a new building to be erected directly adjacent to the present plant at 750 Pacific Street, Brooklyn, N. Y. It will give the company additional space of roughly 30,000 square feet, providing for increased production and additional warehousing space.

# HOLDS 40 TIMES MORE INK

## THAN ORDINARY FOUNTAIN PEN DESK SETS



# Esterbrook® 444

## DESK PEN SET

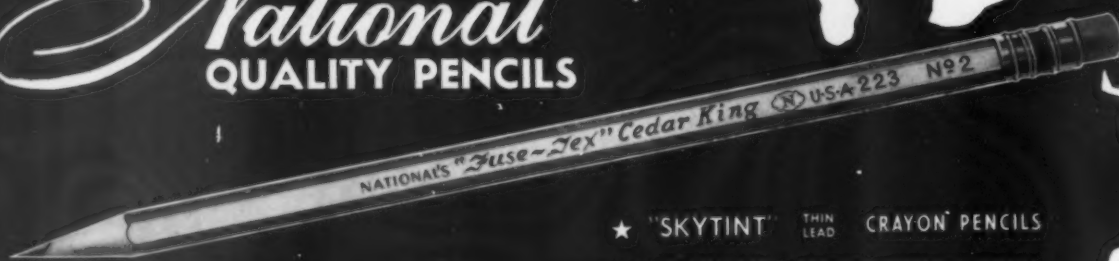
Here's the set for YOU . . . Esterbrook 444 . . . the desk pen set that lets you choose the precise point for *your* kind of writing . . . no matter *what* you write . . . or *how* you write it. Select *your* point and get a personal demonstration at any pen counter.

**THE ESTERBROOK PEN COMPANY**  
CAMDEN 1, NEW JERSEY

COPYRIGHT 1951, THE ESTERBROOK PEN COMPANY

FOR EVERY USE . . .

*National*  
QUALITY PENCILS



- ★ "SKYTINT" THIN LEAD CRAYON PENCILS
- ★ "CORSAIR" COLORED INDELIBLE PENCILS
- ★ AS GOOD AS THE BEST
- ★ WRITE FOR FREE SAMPLES

*Insist That Your Dealer  
Quote You Or Write Us  
Direct For Samples And Prices*

NATIONAL PENCIL COMPANY • SHELBYVILLE • TENN.

220 FIFTH AVE. NEW YORK  
N. Y.

# KOH-I-NOOR PRODUCTS

The RIGHT pencil for the RIGHT job

## 62 Years Ago KOH-I-NOOR

made the FIRST Drawing Pencil . . . in 17 DEGREES, 6B to 9H. Since that time no other pencils have approached Koh-I-Noor's Record for Unfailing Uniform Performance.

No Matter What Your Requirements . . .  
you will find a KOH-I-NOOR  
Product to satisfy you completely

**NOW  
Available**

#1600 KOH-I-NOOR  
Polycolor Pencils  
with IMPORTED Leads  
in 67 colors

DRAWING PENCILS  
COPYING PENCILS  
WRITING PENCILS  
CHECKING PENCILS  
COLORED PENCILS  
OFFICE PENCILS  
ART PENCILS  
HOLDERS • LEADS  
PENHOLDERS • ERASERS



KOH-I-NOOR PENCIL COMPANY, INC. BLOOMSBURY, NEW JERSEY

### IF YOU ARE NOT NOW RECEIVING A PERSONAL COPY OF PURCHASING EACH MONTH

You are missing in every issue of PURCHASING seven services that would cost hundreds of dollars if bought separately—

1. Washington Report for Purchasing Agents
2. Poll of Purchasing Opinion on Current Purchasing problems
3. Price, Production, Inventory Statistical Analysis that help you fortell price changes
4. Inventory (illustrated) of new products
5. Forms that lubricate purchasing department operation
6. Free catalog service
7. Purchasing Legal Service—interpretation of latest legal decisions affecting purchasing

Fortune favors the man well-informed in his own profession.

You can get the full benefit from the wealth of valuable information in PURCHASING by receiving it personally each month. Just fill in, clip, and mail this coupon.

PURCHASING, 205 E. 42nd St.  
New York 17, N. Y.

So that I will receive PURCHASING without delay in month, and in order that I may keep and clip it, send it to me personally as noted below—\$4 for one year.

Mr. ....

Title .....

Company .....

Address .....

## A. L. METTLER HEADS SYSTEMS & PROCEDURES ASSOCIATION

A. L. Mettler, manager of systems and procedures division of the Electric Storage Battery Co., Philadelphia, has been elected president of the Systems and Procedures As-



A. L. Mettler

sociation of America. The board of directors also elected to national offices John W. Haslett, of Shell Oil Co., New York, vice president; James Thomson, of U. S. Steel Co., Pittsburgh, treasurer; and John H. Penny, of the Baltimore & Ohio Railroad, Baltimore 2, Secretary.

## ADDS LARGE CAPACITY MODELS TO ADDING MACHINE LINE



Remington Rand Inc., 315 Fourth Ave., New York, N. Y., has expanded its Topflight line of hand-operated adding machines to include two large-capacity models.

Model 7382-5 has a listing capacity of 7 columns and a totaling capacity of 8 columns featuring direct subtraction and automatic totals. Available with 5" and 13" carriages, it incorporates cushioned power and features direct subtraction as well as subtotal key, multiply key, correction and back space key, feature release key, column indicator, valve gauge and single color ribbon.

Model 7190-5 lists and totals 9 columns, non-subtract, and offers all features of Remington Rand line.

## Tip from America's Top Secretaries

"That numbered scale saves my time and makes my work neater"

... says LOUISE MACLEOD, Secretary to Bruce Barton, famous author and business leader.



## MICROMETRIC CARBON PAPER saves TIME, saves STATIONERY

The "first ladies of business" prefer Webster's MultiKopy Micrometric Carbon Paper because its numbered scale eliminates guesswork...shows just how many lines of typing space remain on a page. The edge scale is handy for smudge-free removal of carbons, too.

Office managers prefer Micrometric because it means better typing production, less spoilage of stationery.

Webster's MultiKopy Micrometric costs no more than other quality carbon papers, while its exclusive numbered scale helps secretaries and typists to produce more with less waste. It's available in a wide variety of weights and finishes.

Next time you need long lasting carbon papers, type-writer ribbons or duplicating supplies, order Webster's. Consult your nearest dealer or write to —



## F. S. WEBSTER COMPANY

7 Amherst Street, Cambridge 42, Mass.

**FORM 061** SERIAL **FLIGHT COUPON**

ISSUED IN EXCHANGE FOR FARE

FORM

SERIAL NO. ORIGINALY ISSUED

DATE

NOT GOOD FOR ONE WAY

BAGGAGE CHECK NOS.

CHECKING

SOLD SUBJECT TO TARIFF REGULATIONS

PSGR. NAME

**REPORTING**

ACTUAL TIME OF FLIGHT ARRIVAL

SCHEDULED TIME OF FLIGHT ARRIVAL

ACTUAL TIME OF FLIGHT DEPARTURE

SCHEDULED TIME OF FLIGHT DEPARTURE

REPORTING

REPORTING

**PURCHASING**

PLEASE COMPLETE AND RETURN ATTACHED ACKNOWLEDGMENT

IMMEDIATELY



## Teamwork on wings ... via the dotted line

Strength in the air makes us secure on the ground. Keeping aviation fit for this takes teamwork, the kind of control and smooth performance turned in on the **DOTTED LINE**—the perforation on business forms made by Moore.

Moore forms promote teamwork everywhere—in manufacture, maintenance, transportation, freight. The forms on this page make efficiency a part of *Checking* (3-part Flight Coupon); *Reporting* (3-part Flight Record); *Purchasing* (8-part Purchase Order).

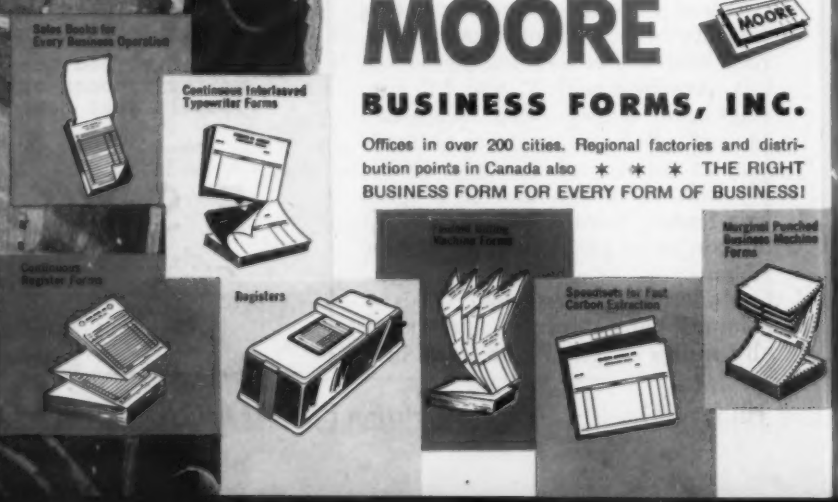
In a hundred other operations, the **DOTTED LINE** makes efficiency pay because it saves writings, simplifies handling, speeds work flow. *It is a FORCE that runs through an organization, keeping performance up and cost down.*

On most styles of forms Moore is producing to capacity—its new, greater capacity—supplying industry with **DOTTED LINE** efficiency to help make America strong. Niagara Falls, N. Y.; Denton, Tex.; Emeryville, Calif.

# MOORE

**BUSINESS FORMS, INC.**

Offices in over 200 cities. Regional factories and distribution points in Canada also \* \* \* **THE RIGHT BUSINESS FORM FOR EVERY FORM OF BUSINESS!**



# The Double Thread Cuts the Time



## in Half!



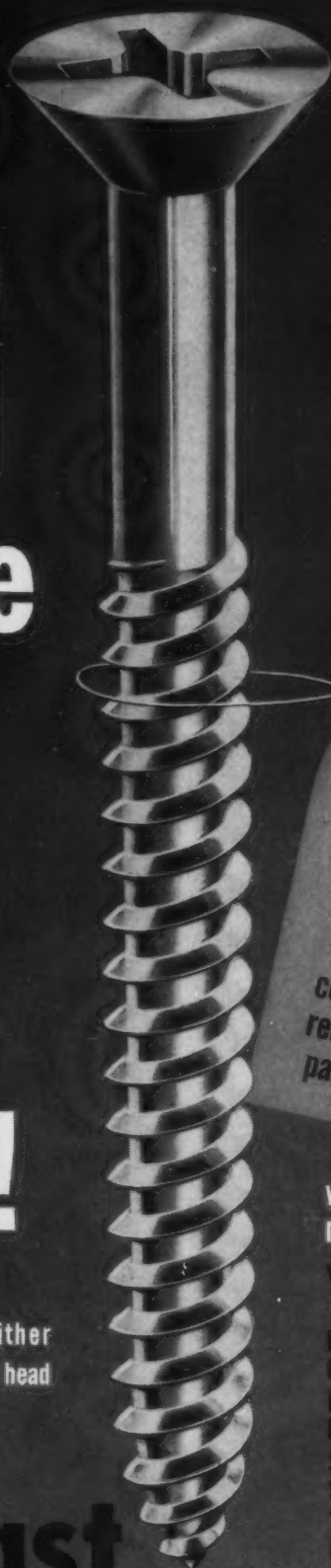
Can be furnished with either  
Slotted or Phillips recessed head

# TWIN-fast

Reg. U. S. Pat. Off.

2,314,391 - 2,314,390 - 2,373,878  
2,373,948 and 2,483,186

The Faster Driving . . . Cost Cutting Fastener



Save assembly time . . . . .  
get better fastenings  
with the TWIN-fast Screw's  
four exclusive advantages

1. Twin thread doubles the pitch . . . drives the screw twice as far for each turn of the driver.
2. Centered point helps make fast, straight start—no wobbling of screw, no displacement of parts.
3. Relieved shank eliminates "wedge action" and splitting—makes stronger fastening.
4. Parallel sides (no taper except at point) gives greater contact—often allows fewer or smaller screws.

you can  
identify  
**TWIN-fast**  
Reg. U. S. Pat. Off.  
by its  
twin threads  
centered point  
relieved shank  
parallel sides

save  
**TIME**  
save  
**DRILLING**  
save  
**SCREWS**  
save  
**REJECTS**

when assembling  
wood to wood, plastic to wood or  
metal to wood

Write for new TWIN-fast bulletin  
to any of these firms:

National Screw & Manufacturing Company  
Cleveland, Ohio, and Los Angeles, Calif.  
Rivco, Inc.  
Downey, California  
Southington Hardware Manufacturing Co.  
Southington, Conn.  
The Stowell Screw Co., Ltd.  
Montreal, Canada  
American Screw Company  
Willimantic, Conn.  
Blake & Johnson Company  
Waterville 48, Conn.  
Continental Screw Company  
New Bedford, Mass.

# AMONG THE Associations



## Walter McPhee Honored by B. C. Association



Walter McPhee receiving pen set from President Bill Penny

"Walter McPhee Night" meeting of the Purchasing Agents Association of British Columbia was a warm tribute by the association to the first Canadian to hold the post of Vice President for District 1 of the National Association of Purchasing Agents.

President Bill Penny opened the affair with a short biography of Mr. McPhee and a review of his accomplishments in the difficult post of vice-president. He declared that Mr. McPhee had not only brought credit to the British Columbia Association, but made many friends for it, both in the district and in the national association.

Geoff Haszard, national director, read letters from all the national executives with whom Mr. McPhee had served in 1949-50. Among those expressing their deep admiration and respect for his qualities and abilities were T. A. Corcoran, Ralph Keefer, Walter Bell, Arthur Pearson, Laurie C. Wakefield, Harry Ainlay, Tom Hudson, R. N. Patrick, Bill Hunt, Hack Jones, and George Renard.

The particularly apt remarks of George Renard seemed to sum up the writers' sentiments. "A little bird sitting on the grapevine" he wrote, 'tells me that you fellows are planning to be nice to Walter McPhee some evening very soon and in doing so, I am afraid you are going to embarrass the fellow.

"I think he turns a little bit grey when offended and I know that he goes well over to the red side when told the truth about himself which is certain to be complimentary and flattering.

"I think you should pour it on a bit and let him blush, for he is a very able citizen and a very courteous gentleman and that is a very sound combination which is not too common.

"Walter backs up what he stands for and in my book, he stands for the right things and if that makes his face red, I am not a bit sorry."

Mr. McPhee was presented with a beautiful double desk pen set, inscribed to commemorate the occasion.

### 1 1 1 PURCHASING UNDER THE O.P.S. NEW YORK ASSN. TOPIC

The annual meeting of the Purchasing Agents Association of New York was held at the Builders' Exchange Club on Tuesday, June 19. Guest speaker was Carl A. Person of the legal staff, Regional Office No. 2, Office of Price Stabilization. Mr. Person's subject was, "Purchasing Under the O.P.S." A question period followed.

Edward A. Bantel, National Bureau of Casualty Underwriters, was elected and installed as president of the association for the coming year.

Other new officers are: first vice-president, John F. Snedeker, Binney & Smith Company; second vice-president, Michael D. MacBurney, Barrett Division, Allied Chemical & Dye Corporation; treasurer, Edward B. Fiellis. J. H. Leonard is executive secretary. Members of the executive committee, named for a three-year term, are: Harry B. Barnett, Polychemicals Department, E. I. duPont de Nemours & Company, and Harold A. Johnson, United States Rubber Company.

### 1 1 1 WILLIAMS NEW PRESIDENT OF NEW ENGLAND ASSN.

George F. Williams, Farrington Manufacturing Company, has been elected president of the New England Purchasing Agents Association.

Other new officers are: vice-president, Wilbur G. Hayward, Forbes Lithograph Manufacturing Company; treasurer, Herbert Layport, Wyman-Gordon Company; national director, Stephen H. Reando, Rockwood Sprinkler Company. Directors are: Edwin A. Pierce, Pneumatic Scale Corp. Ltd., George D. Seguin, Norton Company, and Elmer B. Weaver, Gillette Safety Razor Company.

### 1 1 1 LOS ANGELES ASSOCIATION ELECTS NEW OFFICERS

The following new officers for 1951-52 were elected at a recent meeting of the Purchasing Agents Association of Los Angeles:

President, Fred V. Keenan, Keenan Pipe & Supply Co.; first vice-president, F. D. Lortscher, Signal Oil & Gas Co.; second vice-president, W. T. Reynolds, Los Angeles Transit Lines; directors, David L. Wilt, University of California at Los Angeles, and John R. Hairgrove, Braun Corporation; secretary, Burt M. Pulver, Barker Bros. Corp.; national director, Virgil D. Waters, Utility Trailer Mfg. Co.

### 1 1 1 DALLAS ASSOCIATION HAS ROUND-TABLE ON C.M.P.

A round table discussion on the Controlled Materials Plan was a feature of the Purchasing Agents Association of Dallas semi-monthly meeting in May. Frank W. Wodrich, association vice-president, and program chairman, was in charge. A film entitled "Make No Mistake", dealing with seismograph operation on land, swamp, marsh, and over water, was also shown, through the courtesy of General Instruments, Inc.

# GOULD

## Plus-Performance

### Plan

...TELLS YOU HOW TO

# SELECT YOUR BATTERIES TO FIT YOUR JOB!

You can increase battery performance as much as 50% through the help of the **GOULD PLUS-PERFORMANCE PLAN**! Here is a complete and integrated system of manuals, articles, specifications, bulletins, record cards and charts which explain and illustrate how to select, charge and handle, maintain and determine the condition of your batteries.

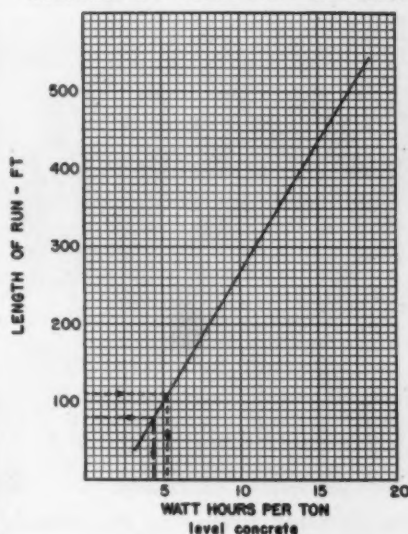
Designed to help you conserve and extend your essential battery power, the **GOULD PLUS-PERFORMANCE PLAN** is **FREE** to **ALL** battery users without obligation. A request on your letterhead will bring descriptive literature by return mail.

### AN EXAMPLE OF PLUS-PERFORMANCE PLAN HELPFULNESS

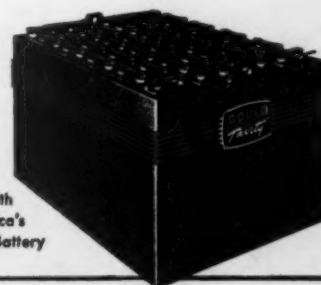
#### Selection Requires Route Analysis

Battery selection should be made only after careful analysis of the route truck will travel and the load it will handle. Knowing weight of truck empty, amount of average load, average length of run and length and percent of grades encountered, simple, easy formulas enable you to calculate the battery capacity needed for 1) level run loaded; 2) going up grade; 3) return trip empty; 4) lifting; 5) tilting. The sum of these five computations gives total watt hours necessary for trip. Multiplying by trips a day gives total daily watt hours required. Dividing this total by battery voltage required gives minimum battery capacity for the job.

WATT HOURS PER TON REQUIRED TO OPERATE  
INDUSTRIAL LIFT TRUCKS OVER LEVEL CONCRETE



This graph plus easily worked formulas enable you to compute required watt-hours.



Gould "Thirty" with  
"Z" plates—America's  
Finest Industrial Truck Battery

# GOULD

## STORAGE BATTERIES

GOULD-NATIONAL BATTERIES, INC., TRENTON 7, NEW JERSEY

Always Use Gould-National Automobile and Truck Batteries

## Visiting Delegates Made N. A. P. A. Convention An International, Coast-to-Coast Affair



From Montreal came (l. to r.) G. J. Glass, C. E. Stiles, George Bourgeois, H. H. Vautier, M. D. Peterkin



Several of the ladies from the Washington (D.C.) Association in a cheerrful mood



Part of the delegation representing the Indianapolis Association



(L. to r.) Russ Wenz, J. H. Philips, John Duncan, Herman Zeck, Frank King, and A. N. Johnston of the Pittsburgh Association



A small state, Rhode Island, sent a large delegation, part of which is shown here



M. C. Staley (l.), president of Washington (Seattle) Assn. with Stan Ringheim and E. C. White

# WHAT WOULD YOU SPECIFY ...

Fluid	Concentration	Temp.	Type of Valve	Valve Material
1 Sulphuric Acid	20%	120 F.		
2 Sulphuric Acid	100%	180 F.		
3 Hydrochloric Acid	32%	80 F.		
4 Hydrofluoric Acid	50%	125 F.		
5 Beer		200 F.		
6 Oxygen		Ambient		

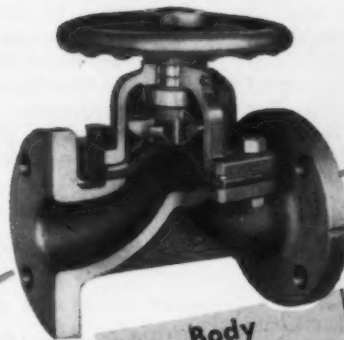
In several of these cases other body materials or diaphragms would serve as well. But the really important fact is the unmatched versatility of Grinnell-Saunders Diaphragm Valves in handling corrosive fluids, gases, compressed air, food and suspended solids . . . in lines where corrosion, abrasion, contamination, clogging, leakage and maintenance are problems.

Grinnell-Saunders Valve bodies are stocked in cast iron, malleable iron, stainless steel, bronze, and aluminum, with other materials available on special order. Valve bodies can be lined with lead, glass, natural rubber or neoprene. Diaphragms are available of natural rubber and a number of synthetics to suit particular service conditions.

The Grinnell-Saunders Valve Division will be pleased to submit recommendations upon receipt of complete information covering service conditions.

## Features of the Grinnell-Saunders Diaphragm Valve

- diaphragm absolutely isolates working parts from fluid
- diaphragm lifts high for streamlined flow in either direction
- diaphragm presses tight for positive closure
- body, lining and diaphragm materials to suit service
- simple maintenance—diaphragm easily replaced



We supplied  
**Grinnell-Saunders  
Diaphragm Valves**  
with ...

Body Material	Diaphragm Material
1 Rubber lined	Natural rubber
2 Cast iron	KEL-F
3 Glass lined	Butyl
4 Magnesium	KEL-F
5 Polished bronze	White diaphragm
6 Cast iron*	Neoprene

\*For oxygen service a low flash point lubricant is supplied. All valves for oxygen service are subjected to 300 lb. air underwater test.

# GRINNELL

WHENEVER PIPING IS INVOLVED



Grinnell Company Inc., Providence, Rhode Island

Sales Offices and Warehouses in Principal Cities

pipe and tube fittings • welding fittings • engineered pipe hangers and supports • Thermolier unit heaters • valves  
Grinnell-Saunders diaphragm valves • pipe • prefabricated piping • plumbing and heating specialties • water works supplies  
industrial supplies • Grinnell automatic sprinkler fire protection systems • Amco humidification and cooling systems

### T. A. CORCORAN SPEAKER AT ST. LOUIS ASSN. MEETING

A regular monthly meeting of the Purchasing Agents Association of St. Louis was held on May 22 at the Hotel Sheraton. Guest speaker was T. A. Corcoran, past president of the National Association of Purchasing Agents.

Speaking on "Inflation—The Real Enemy", Mr. Corcoran stated that ships, planes and war material were actually being lost since the military appropriation would not do the job intended due to inflation. He called on all purchasing men to fight inflation by resisting unnecessary price increases.

A plaque was presented to Walter M. Lowry in honor of his work and leadership in the association. Mr. Lowry founded the St. Louis Association 35 years ago. He was made an honorary lifetime member of the association.

Membership has reached a new all-time high of 318.

### OKLAHOMA ASSOCIATION OFFICERS INDUCTED

New officers of the Oklahoma City Purchasing Agents Association taking office in June were:

President, J. D. Baker, Stanolind Oil & Gas Company; first vice-president, V. D. Bradshaw, American Iron & Machine Works; second vice-president, D. A. Puckett, W. & W. Steel Company; secretary, Hurley Allen, Capitol Steel & Iron Company; treasurer, Lee Bennett, Oklahoma Natural Gas Company; national director, H. A. Krampert, American Body & Trailer Co.

### R. A. DOYLE NEW PRESIDENT OF CHICAGO ASSOCIATION

Robert A. Doyle, The Glidden Company, Soya Products Division, was elected president of the Purchasing Agents Association of Chicago, at the May meeting.

Other new officers are: first vice-president, Wm. D. Jackson, Container Corporation of America; second vice-president, Leonard M. Ansley, Inland Steel Container Company; treasurer, Harry H. Wise, Cenol Company, Inc.; secretary, L. R. Seen, Borg & Beck Division of Borg-Warner Corporation. New members of the board of governors are: Conrad R. Dreiske, Hudson Screw Machine Products Co.; Henry C. Kopp, Anaconda Copper Mining Co., and Roy A. Peterson, United States Steel Supply Company.

### RHODE ISLAND ASSOCIATION ELECTS NEW OFFICERS

New officers of the Rhode Island Purchasing Agents Association, chosen at the May 28 meeting at the Wannamoissett Country Club, are as follows:

President, Howard R. Smart, Jr., Standard Nut & Bolt Company; first vice-president, Walter G. Barney, Kenne-cott Wire & Cable Co.; second vice-

president, William J. O'Brien, United States Rubber Co.; secretary-treasurer, Arnot Hirst, P.O. Box 1455, Providence, R. I.; national director, J. Joseph Fogarty, State of Rhode Island. Directors are Franklyn A. Adams, Walter A. Maher, Morris Martin, and George F. Smith.

### A. G. RUEDIGER HEADS DAYTON ASSOCIATION

A. G. Ruediger, Supervisor of Purchasing at Airtemp Division, Chrysler Corporation, has been elected president of the Purchasing Agents Association of Dayton.

Other new officers of the association are: first vice-president, H. L. Williams, Monsanto Chemical Co.; second vice-president, J. R. Geyer, Sheffield Corp.; secretary, E. K. Griest, Buckeye Iron & Brass Works; treasurer, L. E. Askins, Gebhart Folding Box Co.; national director, R. O. Long, Standard Register Company; head director, P. Boorum, Moraine Products Division, General Motors Corporation.

### PITTSBURGH ASSOCIATION HEARS OF CITY DEVELOPMENT

A closed meeting of the Purchasing Agents Association of Pittsburgh was held on May 15, at the William Penn Hotel. Guest speaker was Park Martin, director of the Allegheny Conference-Community Development, on "The Pittsburgh Improvement Program." He discussed the many important expansion programs now being carried out in the Pittsburgh area.

The summer stag party of the association was held on Tuesday, June 19, at the Mount Lebanon Country Club.

### HACKETT CLEVELAND ASSOCIATION PRESIDENT

Glenn N. Hackett, Thompson Products, Inc., was recently elected president of the Purchasing Agents Association of Cleveland. Mr. Hackett also continues as a member of the board of directors.

Other new officers are: first vice-president, W. D. Kimmel, Reid Products Division, Standard Products Company; second vice-president, Willard E. Gombert, Addressograph-Multigraph Corp.; secretary-treasurer, August J. Mitchell, Swarthout Company.

### HARRY GIVENS HEADS HAWAII ASSOCIATION

Harry Givens, Hawaiian Dredging Company, was elected to succeed Sid Weinrich, Lewers & Cooke, as president of the Purchasing Agents Association of Hawaii, at the May meeting. Mr. Weinrich will serve as national director.

Other officers elected are: vice-president, Herbert Cullen, Honolulu Rapid Transit; secretary, K. Y. Quon, Star Bulletin; treasurer, Russ Homer, Hawaiian Dredging. Directors are Hugh Dimond, Hawaiian Pineapple Co., Ltd.; George Goss, Castle and Cooke; Jack Black, Civil Aeronautics Administration.

Guest speaker at the meeting was Oakley Dexter, formerly director of purchasing for the Crown-Zellerbach Corporation at Seattle, and now district manager for the company. A member of the N.A.P.A. for 25 years, Mr. Dexter attributed much of his success in the profession to his active participation as a member of the association. He spoke on the importance of selling management on the value of the purchasing function.

## Syracuse & Central N. Y. Assn. Officers



Shown above are the new officers and directors of the Purchasing Agents Association of Syracuse and Central New York for 1951-52. First row, left to right—A. Kemp Stevens, first vice-president; J. M. Austin, national director; D. E. Hethington, president; A. Willard Hoffman, second vice-president. Second row, left to right—C. A. Fowler, director; J. H. Weekes, director; J. G.

Strafella, director; A. T. Morphy, director; M. Riepel, treasurer; G. L. McCaffrey, secretary.

Members of the association visited the plant of Oswego Falls Corporation-Sealright Company on Wednesday, June 27. They were guests of the Company at luncheon and then played golf. A dinner meeting was held in the evening at Fulton Chamber of Commerce.

**It's Efficient . . . Economical . . .  
More Compact . . .**





**the completely Re-Designed**




# **POWER PLUGIN BUSDUCT**


**THEY'RE TOPS** for industrial power and light distribution . . modern in design, more compact, yet flexible, safe, dependable, efficient and economical . . almost 100 per cent salvageable.

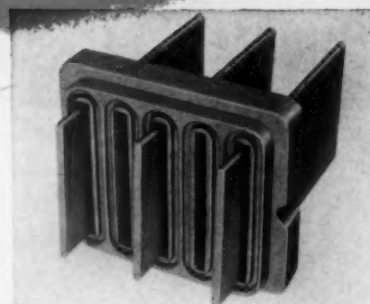
Many of the features which made Plugin  Busduct so popular with industry, have been incorporated in the re-designed  Power Plugin . . . and several new ones have been added.

The housing, for instance, has been made smaller — only 7" wide — enabling it to be used in restricted space. Insulators are new one-piece glazed porcelain with steel channel supports riveted into position.

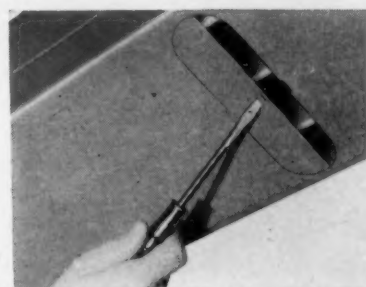
Sliding type plugin opening covers, new simplified, adjustable, two-screw type fasteners for plugin units, two sliding type mounting brackets per section for hanging as desired, silver-plated contact surfaces with two or four brass jam bolts with phosphor bronze cup washers in elongated fastening holes, and attractive pearl grey housing finish, are other features.

Add to these the advantages of plugin outlets every foot of the way . . . providing a ready power source for new or present equipment all along the line, thus eliminating long temporary leads, production delays and high maintenance costs . . . and you'll agree that  Power Plugin Busduct is the answer to today's mighty production demands.

**Want to know more** about this modern system of power distribution? Contact your nearest  Representative (listed in Sweet's) or write to our factory.



New one-piece glazed porcelain insulator. (Steel channel support not shown).



Sliding type, easily operated plugin opening cover permits plugin unit to fit tightly against housing.

Capacities: 250 to 1000 amps, 600 volts AC or less with Klampswitchfuz, Shutlbrak or Circuit Breaker plugin units for 200 amps or less



*Our 60th Year*

## **Frank Adam Electric Co.**

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**OPERATIONS:** Thread cutting and machining on automatics and hand-operated screw machines. Thread rolling, metal stampings, bending and spot welding. Facilities for secondary operations.

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**Now on Pratt & Whitney Vertical Die  
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On the new P & W Vertical Die and Surface Grinder a circular strip of Fullergript brush is mounted on the guard surrounding the grinding wheel to protect the operator from spray and to concentrate coolant on the work. Fullergript was selected because the brush material—in this case abrasion-re-

sisting nylon—is densely packed, and anchored in a rust-resistant metal channel. Fullergript can be formed into innumerable shapes and attached to stationary or power-driven mountings. For ideas on how Fullergript can help you, send for our booklet, "Fullergript Power Brushes". Write to...

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### WISCONSIN N.I.G.P. CHAPTER MEETS IN MILWAUKEE

The second quarterly meeting of the Wisconsin chapter National Institute of Governmental Purchasing, was held recently at city hall in Milwaukee. This was the first meeting of the group since the election of 1951 officers—Joseph V. Duffy, purchasing agent for Kenosha, Wis., president, and George S. Quinn, purchasing agent for Racine, Wis., secretary.

Deliveries of materials for municipal use were reported not as bad as expected, except that copper wire and cable are rather scarce. Although escalator clauses had not been put into effect to any extent, Mr. Duffy reported a bill now being considered in the Wisconsin legislature having an escalator clause concerning certain building construction work.

Sentiment at the meeting was that the killing of fair trade laws by the recent Supreme Court decision would not affect municipal purchases to any extent. Several city purchasing agents reported that a clause is being inserted on orders requiring invoices for equipment and material to show that all prices are in accordance with federal regulations. Many suppliers were said to be objecting to such clauses.

Andrew Lehrbaumer, assistant purchasing agent for the city of Milwaukee, read a list of quotations for material required by the city in the past few months, and compared prices with those of a similar period in 1950. On 25 items, price increases ranged from 18% to 74%.

The group was taken on a tour of the Forest Products Laboratory in Madison and shown the extensive processes for testing various forest products.

The next quarterly meeting will be held September 21.

### PRITCHETT NEW PRESIDENT OF LOUISVILLE ASSN.

Hoyt B. Pritchett was recently elected president of the Purchasing Agents Association of Louisville. Other new officers are: first vice-president, Thor C. Laugesen; second vice-president, Richard Clark; secretary, Charles T. Hoertz; assistant secretary, Charles W. Schroeder; treasurer, Louis A. Kirchofer. Directors are: Calvin H. Marcus, Harold J. Laufer, and W. G. Blackiston.

### UTAH ASSOCIATION NAMES NEW OFFICERS

The following new officers were elected for the coming year at the recent annual meeting of the Purchasing Agents Association of Utah:

President, M. Vern Woodhead, Independent Coal & Coke Co.; vice-president, Gordon Burt Affleck, The Church of Jesus Christ of Latter-day Saints; secretary, George R. Ten Eyck, Geneva Steel Co.; treasurer, Kenneth W. Yeates, Jr., Phillips Petroleum Co.; national director, John P. Hopkinson, Utah Poultry & Farmers Cooperative.

(Please turn to page 202)

Using **copper** in your product?

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need to buy!*

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CLAD METALS

If you don't use the "inside" of the gauge thickness in your copper strip applications, have the core of plain steel—and save money as you save essential copper for defense! With SuVen<sup>®</sup>eer Clad Metals, you get the dense, solid surface of copper, bonded inseparably to low carbon strip steel on one or both sides. You get the performance you need, at lower cost. • Write for the detailed facts.

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If you are using a paper that doesn't quite meet your needs — or need a type of paper not available — we'd like to offer our help. As specialists in combining unusual fibers to make papers with unusual characteristics, we may already have the solution to your problem. If not, our paper technicians may be able to develop *exactly* what you need.

It will pay you to check with our representatives *today!*



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### ROCHESTER ASSOCIATION DISCUSSES C.M.P.

The Controlled Materials Plan was the topic of the evening for the May Meeting of the Purchasing Agents Association of Rochester held at the Rochester Club. John Noonan, District Superintendent of the Department of Commerce and Phelps Harding, Director of Priorities, were present from the local NPA Office.

The meeting was attended by 150 members and guests. Wilson B. Wight led the discussion by members just returned from a CMP Clinic held in New York City. Mr. Wight outlined CMP procedures and advised all members to familiarize themselves with CMP and to work with the Industry Divisions or Claimant Agencies governing them.

Gerald J. Andres explained the existing CMP Regulations and stated that Regulations 5, 6 & 7 would be issued about July 1st. Sylvester W. Aman talked on filing CMP Form 4B and urged that these forms be filed by May 31st with CMP 50 enclosed for identification of allotment. James A. Cooney told how to apply for allotments for "A" Products and "B" Products and stated that a new MRO order would be issued soon.

The meeting resolved into an open discussion with questions being answered by the foregoing members with clarification from the local NPA representatives.

The incoming president, Mr. Joseph L. Ernst, was presented with the association gavel by Mr. Aman and a five minute sketch of his company's products was given by Louis A. Mumford of the Rochester Manufacturing Co., Inc.

✓ ✓ ✓

### TWIN CITY ASSOCIATION HOLDS ANNUAL SUMMER PARTY

The annual summer party of the Twin City Association of Purchasing Agents was held on May 25 at Eau Claire, Wis. Included in the party was a visit to the plant of the United States Rubber Company at Eau Claire in the afternoon. Following cocktails at the Eau Claire Country club, the members enjoyed dinner and dancing. Numerous prizes were awarded.

✓ ✓ ✓

### M.P.A.C. NAMES SHARKEY PRESIDENT FOR 1951-52

John J. Sharkey, Culbert Pipe & Fittings Co., was elected president of the Metropolitan Purchasers' Assistants Club at the June 12 meeting, held in the Midston House, New York, N. Y.

Other new officers are: Peter P. Gel-eta, Johns-Manville Corp., vice-president; G. J. Riviera, Aluminum Company of America, secretary; George L. Stapleton, Charles F. Hubbs & Co., treasurer; and Robert O. Condit, American Oil & Supply Co., chairman of the executive board.

An entertainment feature of the annual meeting was the showing of a film, "Skyway to Mexico", through courtesy of American Airlines.

(Please turn to page 204)

BY "SAVING" \$19.90 ON THESE TWO DRIVES

THEIR USERS

LOST \$446.10



This compact, efficient, long lived polishing machine drive comprises BOSTON RATIONATOR, BOSTON SPROCKETS and CHAIN, BOSTON GEARS.

This textile yarn drawing machine drive employs BOSTON SPROCKETS, BOSTON DOUBLE ROLLER CHAIN, BOSTON GEARS. Oil tight chain case permits oil-bath lubrication. Maximum production, no slippage, no power loss, minimum maintenance are assured by this drive.



To save \$12.50 first cost this chain drive on a sheet metal polishing machine was equipped with cheap sprockets. They wore out fast — caused a wobble that hurt machine performance — had to be replaced by BOSTON Sprockets and Chain.

Cost of replacing drive (two men, 4 hrs. @ \$4.25 per hr.) — \$34.00.

Down time loss (profit and overhead) 4 hrs., 30 sheets per hr., \$1.20 per sheet — \$144.00.

$\$144 + 34 - 12.50 = \$165.50$  net loss.

To save \$7.40 this textile machine drive was equipped with "bargain counter" sprockets and chain. It wore out and broke down twice, before being replaced by BOSTON Sprockets and Chain.

Cost of replacing drive, two times (two men, 4 hrs. each @ \$3.00 per hr., each time) — \$48.00.

Down time loss (profit and overhead) 80 bobbins, 4 hrs. down, each time, \$1.50 per bobbin — \$120.00 x 2 — \$240.

$\$240 + 48 - 7.40 = \$280.60$  net loss.

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- BOSTON, MASSACHUSETTS
- BRIDGEPORT, CONNECTICUT
- BROOKLYN, NEW YORK
- BUFFALO, NEW YORK
- CHARLOTTE, NORTH CAROLINA
- CHATTANOOGA, TENNESSEE
- CHICAGO, ILLINOIS
- CINCINNATI, OHIO
- CLEVELAND, OHIO
- COLUMBUS, OHIO
- DALLAS, TEXAS
- DAYTON, OHIO
- DES MOINES, IOWA
- DETROIT, MICHIGAN
- GRAND RAPIDS, MICHIGAN
- GREENSBORO, NORTH CAROLINA
- HAMILTON, ONTARIO
- HARTFORD, CONNECTICUT
- HOUSTON, TEXAS
- INDIANAPOLIS, INDIANA
- JACKSONVILLE, FLORIDA
- KANSAS CITY, MISSOURI
- KNOXVILLE, TENNESSEE
- LANCASTER, PENNSYLVANIA
- LONDON, ONTARIO
- LONG ISLAND CITY, NEW YORK
- LOS ANGELES, CALIFORNIA
- LOUISVILLE, KENTUCKY
- MEMPHIS, TENNESSEE
- MIAMI, FLORIDA
- MILWAUKEE, WISCONSIN
- MINNEAPOLIS, MINNESOTA
- MONTREAL, QUEBEC
- NEWARK, NEW JERSEY
- NEW ORLEANS, LOUISIANA
- NEW YORK, NEW YORK
- OAKLAND, CALIFORNIA
- PHILADELPHIA, PENNSYLVANIA
- PITTSBURGH, PENNSYLVANIA
- PORTLAND, OREGON
- PROVIDENCE, RHODE ISLAND
- QUINCY, MASSACHUSETTS
- RICHMOND, VIRGINIA
- ROCHESTER, NEW YORK
- ST. LOUIS, MISSOURI
- SAN FRANCISCO, CALIFORNIA
- SEATTLE, WASHINGTON
- SPRINGFIELD, MASSACHUSETTS
- SYRACUSE, NEW YORK
- TAMPA, FLORIDA
- TOLEDO, OHIO
- TORONTO, ONTARIO
- TRENTON, NEW JERSEY
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### DENVER ASSOCIATION ELECTS OFFICERS

Carl R. Roberts of Great Western Sugar Company was recently elected president of the Purchasing Agents Association of Denver.

Other new officers are: vice-president, Howard S. Kelsey, Warner Co., Inc.; secretary, Harry A. Treichter, Gates Rubber Company; treasurer, Allen T. Woodward, Armco Drainage and Metal Products Company.

Frank L. Ayer of Gardner-Denver Company was named national director.

G. L. Puckett, secretary of the association for the past ten years, was not a candidate for re-election, since he resigned as Purchasing Agent of the Eastman Oil Well Survey Company in June.

♦ ♦ ♦

### TRI-STATE ASSOCIATION

A regular meeting of the Tri-State Association of Purchasing Agents was held on May 15 at the Hotel Lafayette, Marietta, O. Guest speaker was Robert Mansfield, The B. F. Goodrich Company, on "Koroseal".

♦ ♦ ♦

### CENTRAL MICHIGAN ASSN. MEETS AT LANSING

An open meeting of the Purchasing Agents Association of Central Michigan was held in May at the Mutual Building, Lansing, Mich. Guest speaker was J. V. McQuillen, United States Department of Commerce, Bureau of Foreign and Domestic Commerce. Mr. McQuillen discussed N.P.A. regulations, particularly the Controlled Materials Plan, and answered questions from the floor.

The June meeting of the association was held at the Owosso Country Club, Owosso, Mich. CMP, CPR-22, Reg. 2 and other NPA and OPS regulations were forgotten, and golf, dinner and entertainment were the order of the day.

♦ ♦ ♦

### EASTERN NEW YORK ASSN. HAS SUMMER OUTING

The annual summer outing of the Purchasing Agents Association of Eastern New York was held on June 21 at the White Sulphur Springs Hotel, Saratoga Lake, N. Y. Among the entertainment activities were softball, horseshoe pitching, darts, croquet, cards, and golf. Numerous prizes were awarded.

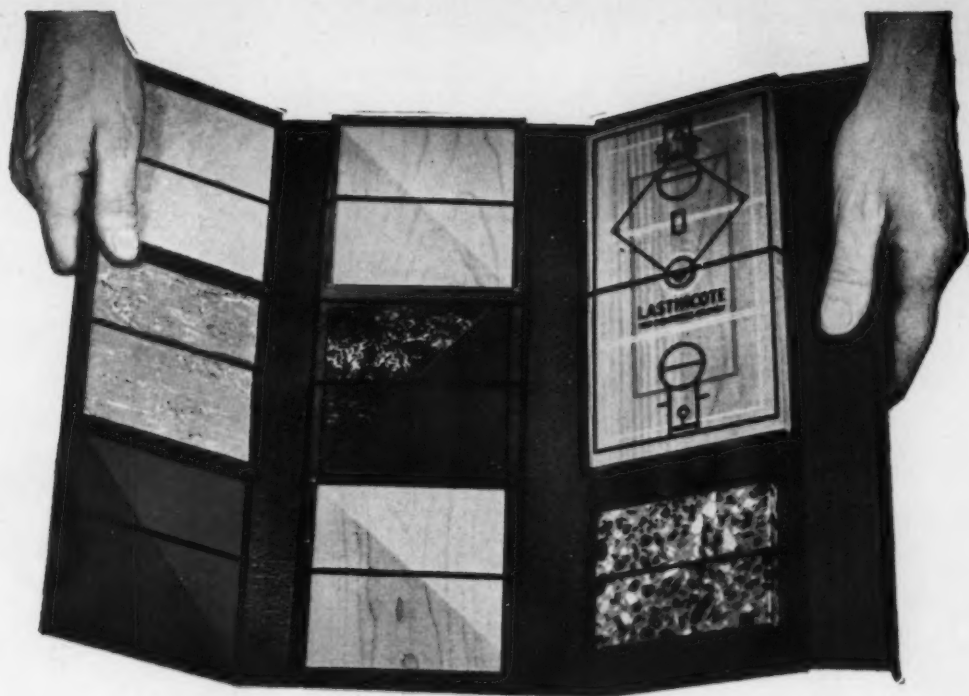
♦ ♦ ♦

### GLENN McQUISTON HEADS YOUNGSTOWN ASSOCIATION

Glenn McQuiston, Sharon Steel Corporation, was recently elected president of the Purchasing Agents Association of the Youngstown District. He succeeds Roy Mills, General Fireproofing Company.

Elected to the board of directors were Lou Bretzell, Copperweld Steel Company; Adrian Gabik, Brainard Steel Company; and William Zarbaugh, Cold Metal Products Company.

(Please turn to page 206)



# VISIBLE PROOF that may save you the cost of a new floor!



A professional kit—specially designed for *visual comparison*. Contains virtually every type of flooring made from linoleum to terrazzo! One-half of each flooring sample is untouched—while the other half is coated with the West sealer or finish formulated to preserve the surface indefinitely. Select the sample that applies to you. Inspect the treated and untreated surface. Scratch it. Burn it. Soak it. Choose the finish that meets your requirements—without moving from your desk!

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Meet the increasing demand on available manpower with Coffing Safety-Pull Hoists. Here are mechanical muscles that are bought, not hired — and they're yours for keeps. With a Safety-Pull to relieve the burden of countless lifting, pulling jobs, more skilled effort is applied where it pays—in production.

Safety-Pulls work efficiently any place — indoors or out, vertically or horizontally. To assure long life, to protect your men and materials, each is factory tested at 100 percent overload. Start now to get the most from available manpower by enlisting the help of dependable Coffing Safety-Pull Ratchet Lever Hoists. Nine sizes with capacities from 1,500 to 30,000 lb. Write for Bulletin Z7SP.

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Quik-Lift Electric Hoists • Hoist-Alls  
Mighty-Midget Pullers • Spur-Geared  
Hoists • Differential Chain Hoists • Load  
Binders • I-Beam Trolleys

## LANCASTER CLUB ELECTS NEW OFFICERS

New officers of the Purchasing Agents Club of the Manufacturers Association of Lancaster, Pa., elected at a recent meeting are:

J. M. Lafferty, president; T. J. Bergen, vice-president; Charles Eaby, secretary; and J. E. Lesher, treasurer. Directors are: R. H. Anderson, William Lawton, Clarence B. Horning, Ralph Taylor, and H. W. Mason.

The annual stag picnic of the group was held on Tuesday, June 19, at Wheatland Park.

♦ ♦ ♦

## CHICAGO WOMEN'S GROUP HEARS TALK ON LIFE IN AUSTRALIA

A regular meeting of the Women's Division of the Purchasing Agents Association of Chicago was held on Thursday, June 14 at the Electric Club, Civic Opera Building. Miss Colette Todhunter, buyer for Eastman Kodak Company, described "Life in Australia". Miss Todhunter spent much time in Australia last year, visiting her family.

Guest speaker at the May meeting was Clem C. Caditz, president of Northern Metal Products Company. His subject was "An Ex-Purchasing Agent Looks Around."

♦ ♦ ♦

## SOCIAL EVENTS MARK SUMMER PROGRAM OF CINCINNATI ASSN.

The summer program of the Cincinnati Association of Purchasing Agents will feature the following events:

Saturday, July 21—annual Stag Picnic at the Melbourne Country Club; Saturday, August 4—Member and lady picnic at Oak Ridge Lodge, Mount Airy Forest; Tuesday, August 21—a golf and get-together party at the Cloverbrook Country Club.

♦ ♦ ♦

## PREDICTS COAL GAIN IN FUELS' BATTLE

The critical point at which coal will begin replacing currently competitive fuels on a permanent basis is "just around the corner," according to Joseph Pursglove, Jr., of Pittsburgh, Pa., vice president—research and development, Pittsburgh Consolidation Coal Co., in a prepared discussion on "Coal's Possibilities in the Next Ten Years." Mr. Pursglove's analysis reviews rates of consumption and estimated proved reserves of liquid fuels, gas, and coal, and also traces established trends in competitive markets.

Pointing out that coal represents approximately 96 per cent of the recoverable energy reserves and that the scarcest mineral fuel resources—oil and gas—are being used up at an increasingly faster rate, Mr. Pursglove says that coal's competitive struggle will become less intense in the coming years and that it will move into "more and more situations occupied by liquid fuels and natural gases" after 1955.

(Please turn to page 208)

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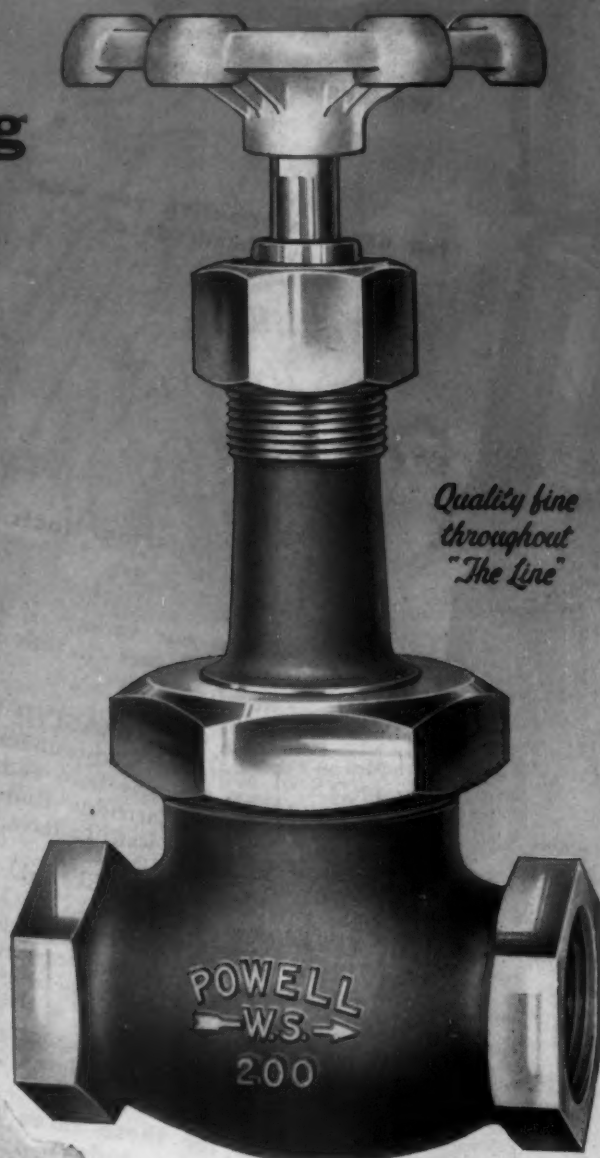


Fig. 2608—200-pound Bronze Globe Throttling Valve. Designed to permit full flow through the seat when wide open. Has special bronze stem. The stainless steel disc and seat are hardened to approximately 500 Brinell.

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 PHENOLIC TUBING. Gives endless  
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(Continued from page 206)

A prolonged period of international tension, in which there are heavy strains on domestic reserves of both petroleum and natural gas, would hasten the general reversal in fuel uses, Mr. Pursglove explains, and these fuels will be "withdrawn from present-day uses" where coal can be substituted.

#### Reversal Already Started

"We are already witnessing what one might call a small reversal in trends because many oil consumers are now transferring back to coal," the Pittsburgh Consolidation executive declares. "This trend will continue and will grow as long as the tension lasts, but it will not be a permanent trend until the day the big reversal arrives."

A production peak of from 6½ to 7 million barrels of petroleum products per day will be reached some time between 1955 and 1960, Mr. Pursglove estimates, after which there will be a gradual decline in the productive capacity of the oil industry.

"As crude oil becomes more and more expensive to produce and the demand for the lighter petroleum products keeps exceeding domestic supply," he continues, "refiners will want to convert more and more of the crude oil into gasoline, diesel oils, and furnace oils that bring premium prices into the market place. In other words, less and less heavy residual fuel oil (bituminous coal's principal liquid fuel competitor) will be produced."

Reserves of oil are not as satisfactory as they once were, he explains, but factors presenting problems to that industry include distances or markets from gas sources, seasonal demands, and lack of storage facilities. He believes that the limited opportunities for year-around business in natural gas will act as a brake on pipeline financing and building within the next two to four years.

#### NEW PRINCIPLE SPEEDS UP SIGMA WELDING OF STEELS

A new principle that multiplies the speed of sigma (shielded inert gas metal arc process) welding of stainless and carbon steels has been announced by Linde Air Products Company, a division of Union Carbide and Carbon Corporation, 30 E. 42nd St., New York, N. Y. Unusual results have been obtained by use of a mixture of oxygen in argon as a shielding atmosphere.

Earlier research had established that, for best welding conditions, metal transfer consists of a series of discrete metal droplets propelled at a high velocity. Droplet formation will vary with different metals and for different current densities.

Recent investigations by Linde have shown that the droplet rate particularly on stainless and carbon steels, can be materially increased by the addition of small percentages of oxygen to highly purified argon. Droplet rate in this oxy-

(Please turn to page 210)

*Is this clue to quality  
on your product?*



*Can you find the clue...*



*...to quality?*

**X** marks the spot...



#### **Yes! a PHILLIPS SCREW**

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Give your customer a well-  
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BY USING PHILLIPS SCREWS on your product, you prove *on sight* that you use extra care in manufacture. The public knows that X marks the spot — the identifying X formed by the cross-recess on the head of every Phillips Screw. It is the mark of extra quality.

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THE FASTENERS OF TODAY... AND OF THE FUTURE

JULY, 1951

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209

**picture of a Plant Manager**  
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No frantic telephone calls during the day trying to find wiping material for him. No loss of sleep at night worrying about it.

He has KEX\*—a steady, reliable source of high quality industrial wiping towels coming into his plant regularly, neatly bundled, and in just the quantity he needs.

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He decided no makeshift Wipers for *his* plant! He wanted to save time, money and worry by having the best. So he discovered that KEX towels are super-absorbent, softer, uniform in size, hygienically clean and made for orderly shop housekeeping. He also went for the fact that a percentage of KEX towels is printed with safety slogans.

So if wiping problems are giving you headaches—and sleepless nights—look up the KEX distributor in your classified telephone book. There's nothing to buy, just a low rental service per month. Better do it right away, though. Everybody's getting the KEX idea.



**"KEX"**  
\*  
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**NATIONAL  
SERVICE**

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(Continued from page 208)

argon mixture has been as much as 50 times greater than in an atmosphere of pure argon, other conditions being the same.

This increased rate, with no change in current density, permits welding at higher speeds without undercutting. Coalescence of the weld metal is improved at increased welding speeds. Overhead welding of stainless steel is made practicable.

On the other hand, the oxy-argon mixture permits welding at lower current densities. This means that larger diameter, more economical rods may be used for a given welding current. If the same size rod now available is used, then thinner materials can be welded.

Use of this special argon is expected to expand the application of sigma welding on stainless steel because of improved economy, and ability to perform welding operations not practicable with straight argon. Likewise, on carbon steels, increased applications of sigma welding can be expected as welding speeds can be at least doubled, gas consumption correspondingly reduced, and less expensive welding rod used.

The oxygen-argon mixture has been introduced on the market as Linde argon-sigma grade. Its price will be the same as for Linde argon, standard welding grade.

#### ACHIEVES STRONG SILICONE RUBBER-TO-METAL BOND

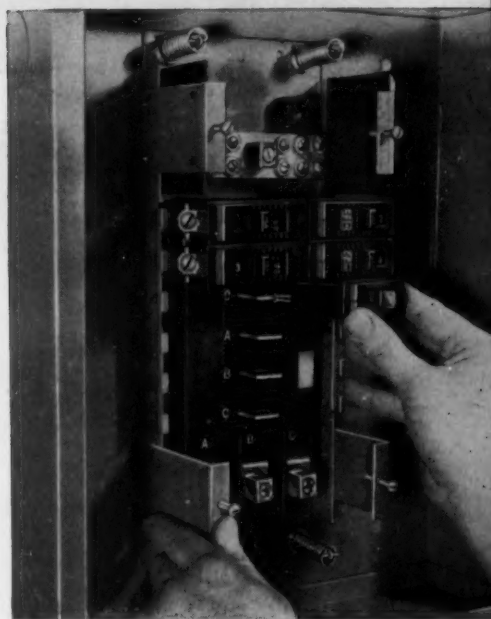
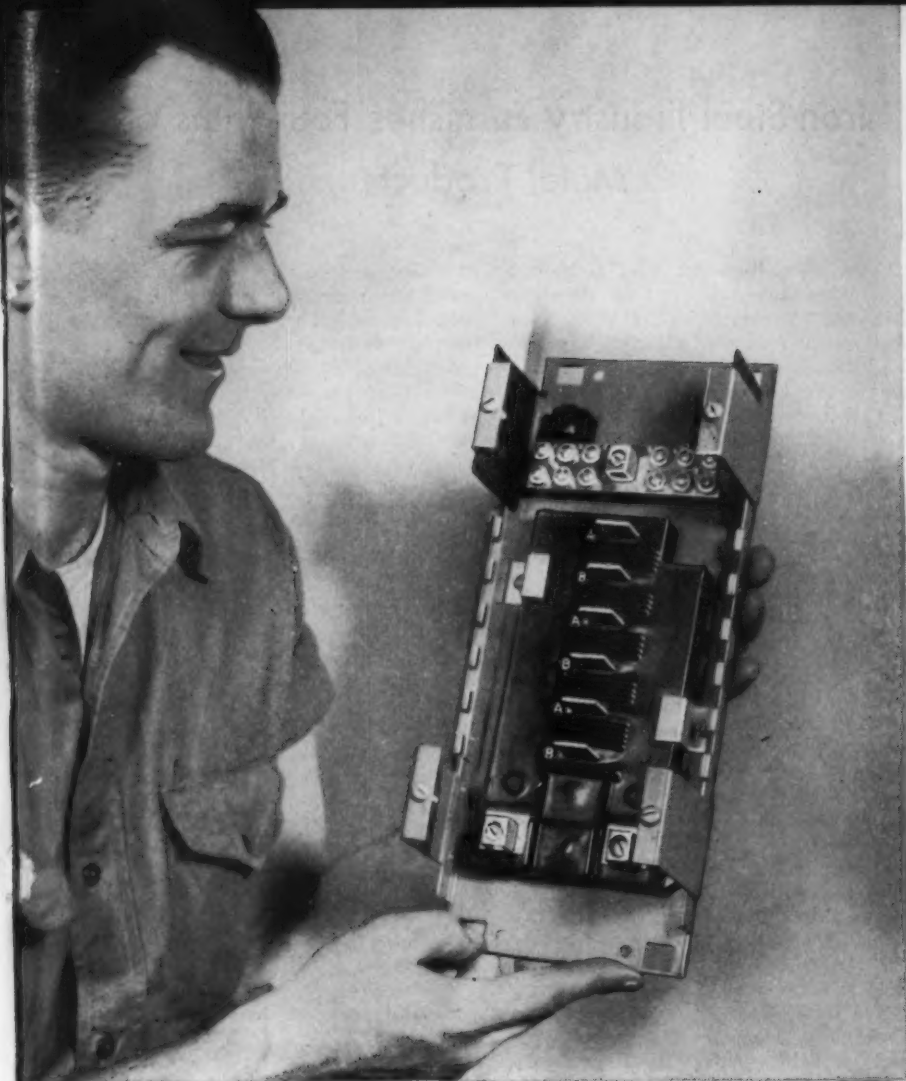
A new chemical development of General Electric's Chemical Department makes possible a bond between silicone rubber and metals or ceramics that is stronger than the rubber itself.

Designated as G-E 81267 primer, it is a thin, light-colored liquid. By using it, G-E silicone rubber 81223 can be bonded to almost any surface. Bonds to glass, ceramics, aluminum, steel, tin, and copper are possible, and sheer strength measurements of bonds on steel are approximately 700 lbs. per sq. in. A unique feature of G-E 81267 primer is its ability, in most cases, to develop a bond strength greater than the strength of the rubber at any stage of the cure.

The technique of applying and using this primer is quite simple and easily fits into the fabricating techniques now employed with the newer G-E silicone rubber compounds.

The development of G-E 81267 primer now makes possible a wide variety of silicone rubber-to-metal molded products which include shock and engine mounts that resist both high and low temperatures. Also improved rubber-glass laminated structures are now possible, and G.E.'s new high-strength silicone rubber in conjunction with G-E 81267 primer can be used as an adhesive with unusual new properties.

**CLASSIFIED SECTION  
SEE PAGE 292**



**QUICK-MAKE, QUICK-BREAK PLUG-IN BREAKER**—Trumbull's new NLTQ Panelboard introduces the first *plug-in* circuit breaker with quick-make, quick-break operation. Other features: both *thermal* and *magnetic* protection . . . trip-free . . . pressure-type silver-plated copper plug-in contacts . . . all ratings physically interchangeable. Adjacent breakers are on alternate phases—assuring balanced loads and circuits.

## New insulating material KEEPS PANELBOARDS COOLER

The base of this panelboard interior is made of *Plastisol* . . . the first time this amazing plastic material has been used for this purpose.

Here are some of the properties which make Trumbull's new NLTQ Panelboard a superior product which will give you excellent service.

Plastisol has very high thermal conductivity and is an excellent radiator of heat. Copper bus bars encased in Plastisol run 10% cooler than in 'open air'!

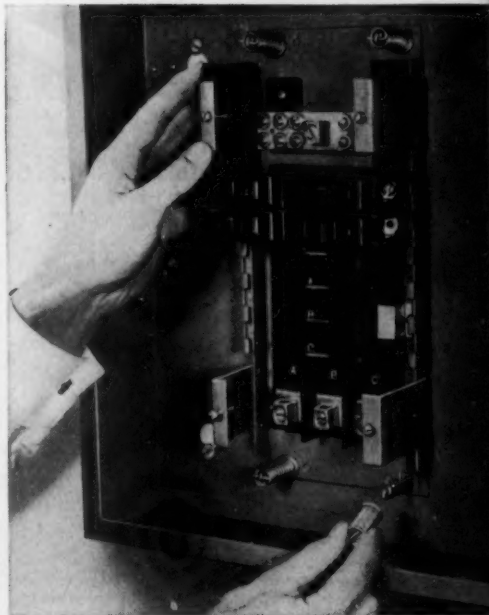
### SUPERIOR TO ALL OTHER TYPES OF INSULATION

Other Plastisol advantages making it superior to all other types of insulation for this purpose include its ability to resist acid and alkali, high temperatures (not harmed at 212 F), tracking and carbonizing. It will not shrink or become brittle, even at minus 30 F.

Trumbull's Plastisol base is Underwriters' Laboratories, Inc. approved and endorsed by the Electrical Council.

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DEPARTMENT OF GENERAL ELECTRIC COMPANY  
PLAINVILLE, CONN.



**QUICK INSTALLATION—NO NUTS AND WASHERS**—Interior is mounted in box by compression springs . . . which permit easy release for removal. Springs also permit lining up fronts regardless of uneven box installation. Trumbull NLTQ panelboards with lug or circuit breaker mains come in capacities up to 225 amperes in a range of 4 to 42 circuits. Write for Bulletin TEB-14.

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## Iron-Steel Industry Furnishes Four-Fifths of Metal Products

About 93 million net tons of metals in all forms were shipped by domestic producers to consumers in 1950, says *Steel Facts*. This was a record tonnage, of which all but about 4 per cent was used in the United States.

In this total of foundry and mill products of the major commercial metals, 72.2 million tons was finished steel, such as sheets, pipe, bars, rails and other items. Counting in foundry iron with those mill products, the iron and steel items furnished more than four-fifths of the country's supply of metal.

### Cast Products Large

Cast ferrous products amounted to over 15 million tons. These products include cast gray iron and malleable iron and steel castings, and are used for such purposes as automobile engine blocks and machinery parts. Only a small portion of this tonnage is turned out by producers of steel ingots. The great bulk is made by thousands of foundries scattered over the country.

The pig iron for these castings, however, constituting about one-third of the ferrous materials for foundry use, comes from the iron and steel industry. The industry shipped over five million tons to foundries last year.

The third segment of the country's metal product supplies was produced mainly by four industries: aluminum, copper and brass, lead, and zinc. They accounted for 5.1 million tons, or 5.5 per cent of total shipments. Each of these industries, like iron and steel, is divided into segments making foundry products and mill products. Some of these four nonferrous metals, however, are included as alloys or coatings in the 72.2 tons of steel; if these tonnages are transferred from steel to the nonferrous category, the latter becomes about 5.6 million tons.

### Copper Leads Nonferrous

The largest production of any division of nonferrous products was in brass and copper. On the basis of incomplete data, the total output of foundries, brass and copper mills and wire and cable mills is estimated at over 2.4 million tons, exclusive of insulation and protective coverings on electrical conductors.

The third largest tonnage among nonferrous products in 1950 was in aluminum, totaling over 1 million tons of mill and foundry products. The use of lead in the year was estimated at 1,210,000 tons, over 200,000 being in chemical forms, such as white lead.

A high portion of zinc production moves into brass and steel mills, so that only a minor part retains its identity in such products as zinc sheets and die castings. Tin and nickel also are used mainly as alloy materials and coatings for steel, copper and other metals.

While steel is far above the other metals in tonnage, the reverse is true of prices, as quoted by trade papers, in the following list of sheet metal base prices, cents a pound (in May): Steel, hot rolled, Pittsburgh, 3.60-75; copper 41.03; yellow brass, 37.84; aluminum, flat, 30.1 and up; lead 22; zinc 24.50 (nonferrous prices at mill).

### Record Steel Output Threatened by Low Scrap Inventories

Inventories of iron and steel scrap were on a hand-to-mouth basis at steel plants in May while weekly steel output was exceeding 2 million tons a week, a record high level. Through a campaign for the prompt collection of all available industrial and farm scrap, steel companies and other organizations were trying to increase the supply of this essential material.

At the plants of 11 major steel companies, scrap inventories declined from an average of over 45 days' to an average of 21 days' supply in a period of approximately three months. Normally, many steel plants feel it necessary to maintain 60 days' supply for most efficient operation.

### Plants Combed for Obsolete Equipment

Industrial plants are being urged to look over their properties for obsolete and unused equipment and other idle ferrous materials which could be sold promptly to scrap dealers.

Industrial plants are asked to appoint an executive to head up the collection of scrap. He in turn will appoint a committee to comb the factory for obsolete machinery and equipment, unusable parts, castings and other scrap materials, as well as production scrap.

Steel companies have been searching their own plants for scrap. One company turned up 7,000 tons of scrap in the form of machinery no longer needed.

Farmers are asked to collect worn-out machinery, tools and other scrap. They are asked to take this material to a scrap dealer in town, or to call a dealer to pick up the scrap. If the scrap is too heavy, collections can be arranged through the county agent.

### Stocks Must Be Built Up

The steel industry must not only provide for its current scrap needs, but must build up its inventories in order to be able to operate its future increased capacity fully.

Imports of scrap in 1950 were 730,631 tons, a decrease of more than 360,000 tons from 1949 but far larger than in other postwar years. Exports fell off 22,000 tons to a total of 276,149 tons. Imports of scrap normally constitute a small percentage of overall consumption but at times have eased a tight supply situation.



## Found:

# The 2% that cured a Pickled Pump

How years of N-B-M Metallurgical experience paid off by solving a severe problem of corrosion

When a vinegar producer suddenly starts having frequent pump failures due to extreme impeller corrosion, it's pretty evident that something unusual is going on . . . particularly when the same pump had been used successfully for years. The pump manufacturer sent an engineer to the installation . . . and found that *concentrated* vinegar was being pumped, instead of *diluted* vinegar as before. Impellers in some cases were lasting only 1 week.

The pump manufacturer came to us with the facts—and our Metallurgical Department was immediately put to work on the problem.

**Result?** In a matter of days, impellers of a new alloy were on their way with a slight but important alloy change . . . the addition of 2% nickel. These impellers now last 18 months to 2 years—longer than they ever had before!

We're proud of examples like this . . . because they show how effectively our facilities for Research and Engineering — combined with 75 years of practical application experience—make money-saving solutions to problems on . . .

**Non-Ferrous Bearings and Castings—**  
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JULY, 1951

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213



## with Longer Lasting FULLER FIBER BROOMS

You can buy other brooms for less than the Fuller Fiber Broom. True economy can be measured only by the length of productive life of a product in relation to its original cost. For example — a broom that costs one-half as much as another is *not* an economical buy when it lasts only one-fourth as long. We believe that a test will convince you that Fuller Fiber Brooms — because they last 3 to 4 times longer — are cheapest in the long run. Write today to...

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## Books

*Basing-Point Pricing Systems under the Federal Antitrust Laws*, by George H. Sage. Thomas Law Book Company, 209 N. Third St., St. Louis 2, Mo. \$10.00

—This is a legal, business and economic analysis of current laws and practices and the problems they present to anyone buying or selling under basing-point pricing systems. The author, a member of the bar, uses scores of illustrations based on actual cases in past and current litigation. Well documented and indexed.

*When Does Title Pass (from Shipper to Consignee and Who Has Risk of Loss or Damage in Transportation)*, by Thomas G. Bagan. Wm. C. Brown Company, Dubuque, Iowa. \$6.50—Among the important points comprehensively covered in the 24 chapters of this well-written book are F.O.B., bills of lading, bailments, sales, export and import terms, routing and shipping instructions, stoppage in transitu for insolvency, claims against carriers, time, place and manner of delivery, and the uniform sales act. A feature of the book is the way in which conclusions from the discussion are clearly and concisely presented at the end of each chapter.

*Purchasing for Small Cities*, by Russell Forbes. Public Administration Service, 1313 E. 60th St., Chicago, Ill. \$1.00—The Deputy Administrator, U. S. General Services Administration, and formerly Commissioner of Purchase, City of New York, draws on long and distinguished experience to describe how to establish a centralized purchasing system for a small municipality, and the procedures to follow in operating it. Suggested provisions for charters or statutes are included. Several purchasing forms are illustrated.

### BEMIS USES NEW WEAPON IN ANTI-INFLATION FIGHT

With an advertisement headed "There is Something You Can Do About Inflation", Bemis Bro. Bag Company is launching a campaign unique in business and industrial circles. The advertisement, the first of a series aimed at giving employers a new employee communications tool in the fight against inflation and attendant national dangers, recommends that employers distribute to their employees a 16-page anti-inflation "comic book" entitled "How Stalin Hopes He Will Destroy America." 10,000 copies of the book have been distributed to Bemis' factory and office employees throughout the country. Work is under way on subsequent books on productivity and the need to regain our economic freedoms when the period of military emergency is over. Further information in regard to the anti-inflation book may be obtained from Pictorial Media, Inc., 205 E. 42nd St., New York 17, N. Y.

(Please turn to page 216)

## ORDERS

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Machine, sheet  
metal and cap  
screws, carriage  
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bolts



Every purchasing agent knows the importance of dependable sources for parts. Slow shipments cost time and money. Schwartzman concentrates on rapid, accurate fulfillment of all orders anywhere in the United States.



FREE catalog will be sent on standard items to make ordering easy. Consultation service available on "special" items.

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in York, Pa., and Aurora, Ill., with a combined manufacturing capacity of 600,000 square feet—1600 employees.

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gained in handling 3800 subcontracts during World War II—for Army, Navy, Aircraft and Ordnance requirements.

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with complete facilities to expedite the production of special tools, dies, jigs and fixtures at both York and Aurora plants.

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analyzes every special contract—determines how to do the job most economically—in the shortest possible time.

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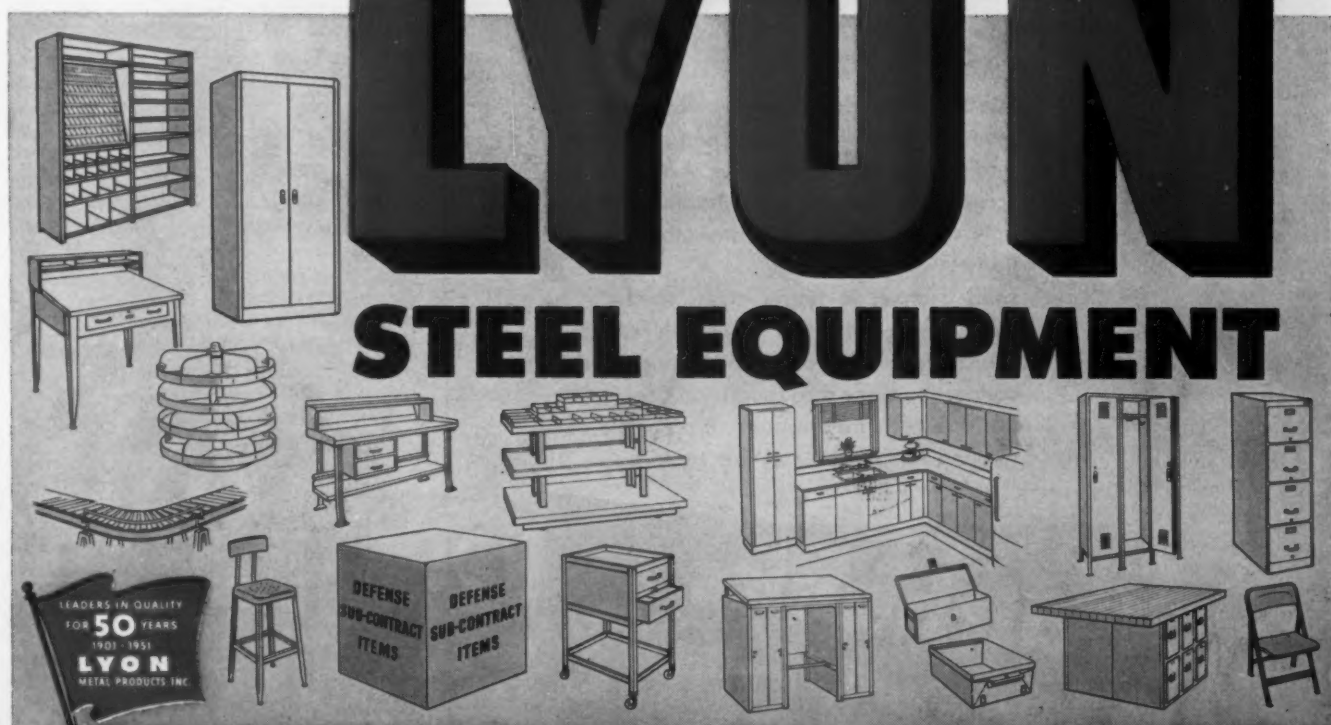
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- Work Benches
- Bench Drawers
- Service Carts
- Sorting Files
- Drawer Units
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- Tool Stands
- Shop Boxes
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# DEPENDABILITY



Illustration above shows Fig. 0405, Outside Screw and Yoke, Flanged End, Iron Body Gate Valve, with Adjustable Sprocket Rim with Chain Guide.

**P**ROVEN dependability—the proven record of Fairbanks valves—is your best guarantee of uninterrupted service in the tough installation—as in any installation.

Specify Fairbanks 125-pound Iron Body Gate Valves for your tough assignments—be certain of dependable service.

Fairbanks Iron Body Gate Valves are bronze mounted both with inside non-rising screw and outside screw and yoke. Available with screwed or flanged ends. Bodies and bonnets are made of high strength alloy cast iron. Wedges in the 2" to 4" sizes are of solid bronze; in larger sizes, to 24", the wedges are of alloy iron with rolled in bronze face rings and bronze bushed stem connections. The threaded bronze seat rings are screwed into the body at an angle conforming to the taper of the wedge.

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## NEW PLATING METHOD SAVES NICKEL

A revolutionary, yet simple, method of metal plating developed by Westinghouse Electric Corporation engineers in 1948 may conserve critical nickel and still provide the nation's new automobiles and appliances with bright corrosion-resistant trim.

George W. Jernstedt, manager of electroplating projects for Westinghouse, said the technique—called periodic reverse-current plating (PR plating)—can be applied easily to auto bumpers, door handles, radiator grilles, body trim, toasters, irons, and tubular furniture.

"Where no nickel at all is permitted, such as on appliances and auto trim," he disclosed, "the new process provides a chrome-on-copper finish that is as bright as the standard finish and has satisfactory corrosion resistance.

"In other cases where some nickel is permitted—auto bumpers, for example—PR plating makes it possible to substitute copper for a major part of the nickel normally used, thus achieving a big savings of this critical material."

"Using the Westinghouse system," the engineer explained, "a layer of copper—about one-thousandth of an inch thick—is plated onto the steel base. If nickel is allowed, we then add a layer about one-half the thickness of the copper layer. The coating is completed with a film of chrome that may be less than 1/100,000th of an inch thick. Before nickel was put on the critical list, the conventional method was to plate the steel first with nickel and then chrome.

"Although not as scarce as nickel, copper is also a critical material," the Westinghouse engineer pointed out. "But," he added, "the new plating system requires only small quantities—much less than for other metal substitutes proposed. In addition, many hundreds of thousands of gallons of copper-plating solution already are available for use.

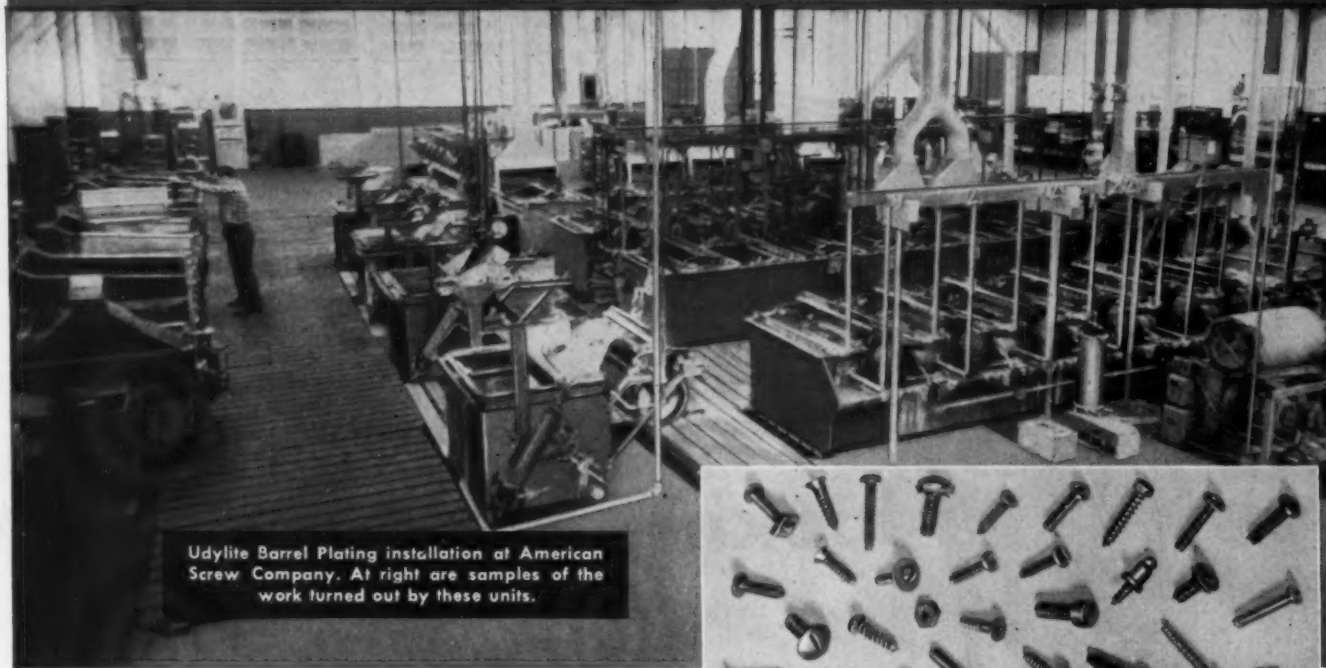
"The key feature of the new plating system," Mr. Jernstedt explained, "is the periodic reversal of short duration of the plating current. This alternately deposits metal on the surface to be plated, then during the reversal, takes some of it away. Continuation of this cycle builds up a plate quality superior to anything previously obtained from straight, unreversed direct current. In effect, the PR system makes it possible both to improve surface smoothness and brightness, and to enhance the body quality of the deposit."

## GRINDING WHEEL BOOKLET

The Grinding Wheel Institute, Greendale, Mass., has published a 12-page booklet entitled "Mounting Technique for Wheel Sleeves on Cylindrical Grinding Machines." It discusses the proper mounting technique for grinding wheels on sleeve type mounts and contains recommendations covering the amount of torque to use when mounting grinding wheels on several makes of cylindrical grinding machines.

(Please turn to page 222)

# NO DOWN TIME IN WEEKS OF 'ROUND-THE-CLOCK OPERATION with **UDYLITE BARREL PLATERS**, reports American Screw Company



Udylite Barrel Plating installation at American Screw Company. At right are samples of the work turned out by these units.



Here's a record hard to equal! American Screw Company, Willimantic, Conn., has a battery of Udylite Barrel Platers for zinc, nickel, cadmium and brass plating of screws. The equipment normally operates 16 hours a day but during peak periods is in constant use around-the-clock for weeks at a time with practically no time out for maintenance or repair.

In addition—according to Walton R. Yerger, Metallurgical Engineer—plating results are highest quality, with uniform thickness and luster from lot to lot and day to day. Rejects are virtually non-existent and plating costs have been substantially reduced.

Udylite Barrel Platers have no equal in ability to stand up under the punishment of continuous production and still turn out well-plated work in a minimum of time. Service records show that a Udylite unit lasts longer and produces more work with less maintenance.

Bring the benefits of Udylite equipment's efficiency and durability to your operations. Call in your Udylite Technical Man today and have him show you the Udylite Way to Better Plating. Or write direct to The Udylite Corporation, Detroit 11, Mich., for complete details. There's no obligation.

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That's why we urge you—if you can't wait for a mill shipment—phone in to your nearest Crucible Warehouse and check our stock for your requirements. While present restrictions have cut into our normal inventory, you can be sure that Crucible warehouse people will do their best to meet your needs.

### *Stocks maintained of:*

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# CRUCIBLE

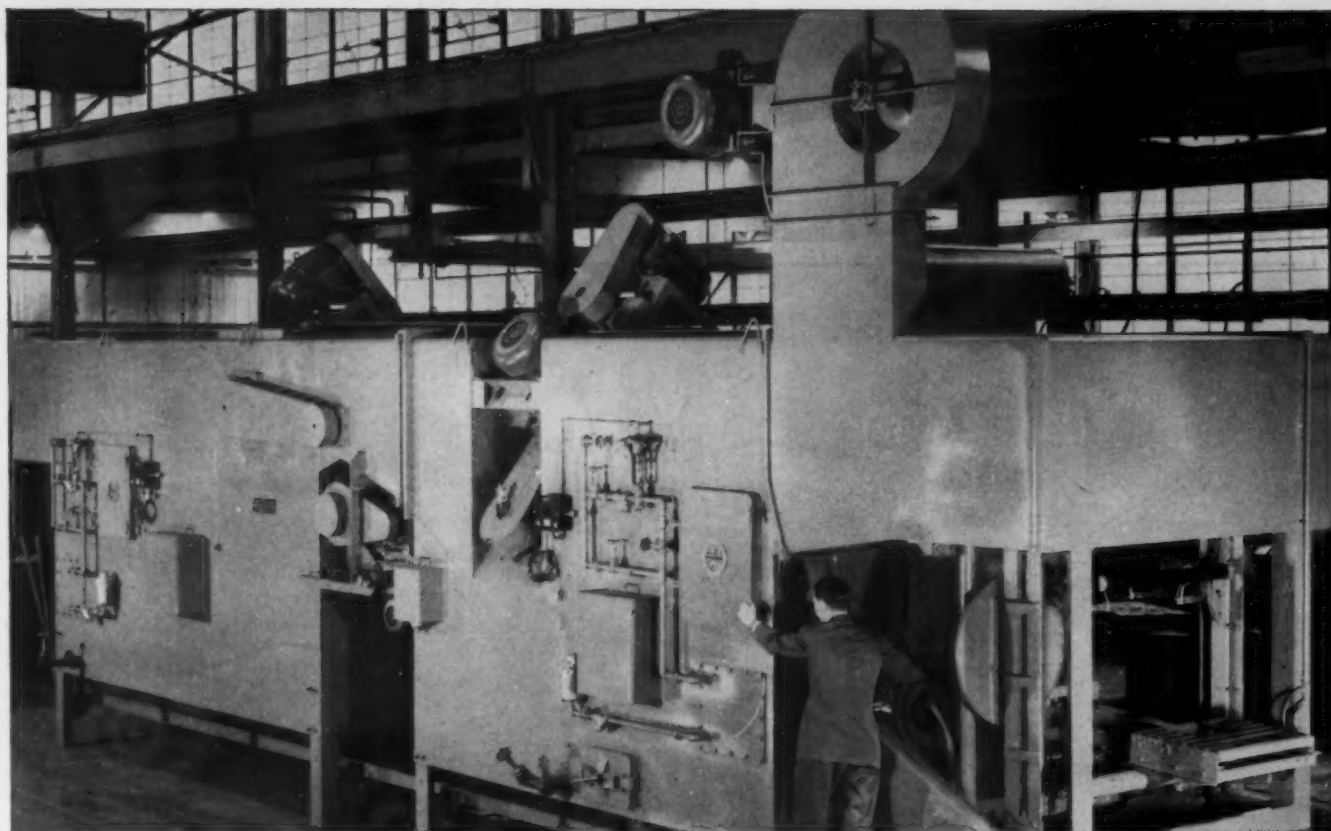
first name in special purpose steels

51 years of *Fine* steelmaking

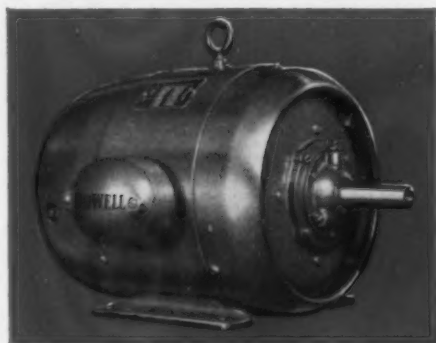
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PROVIDENCE • ROCKFORD • SAN FRANCISCO • SEATTLE • SPRINGFIELD, MASS. • ST. LOUIS • SYRACUSE • TORONTO, ONT. • WASHINGTON, D. C.



## How to give a cylinder block a clean start



Howell Type K Motor. Offers constant performance in the presence of dirt, dust, fumes and moisture. Sizes 3 to 150 H.P. at 1800 R.P.M. Either vertical or horizontal mounting.



Howell Type F Motor. A high-slip, high-torque motor designed for punching and shearing operations. Sizes  $\frac{1}{2}$  to 200 H.P. in open frames;  $\frac{1}{2}$  to 125 H.P. in enclosed frames.

This new Centri-Spray washer thoroughly cleans up to 400 cylinder blocks an hour. It often runs 3 shifts a day, six days a week. A tough job for the nine Howell Industrial Motors which power it!

Four 25-H.P. motors operate the unique Centri-Spray units which envelop the rotating blocks with a powerful high-volume spray of water. A high-head centrifugal pump, equipped with a 15-H.P. motor, flushes blocks internally. All foreign matter is *completely removed*, inside and out. Four motors, from  $\frac{1}{3}$  to 20 H.P., power the automatic sludge remover, the recirculating pump, the main conveyor and the high-pressure blowoff fan.

Howell engineers worked closely with this manufacturer to provide the *right* motor for each application. As a result, this Howell-powered washer easily takes the hardest operating schedule in stride.

Highest quality motors, designed for your specific jobs, are typical of the service you get from Howell. Let us handle your electric motor needs. You'll find precision-built Howell industrial type motors a profitable investment that pays off in extra years of dependable performance.

### HOWELL ELECTRIC MOTORS COMPANY

Howell, Michigan

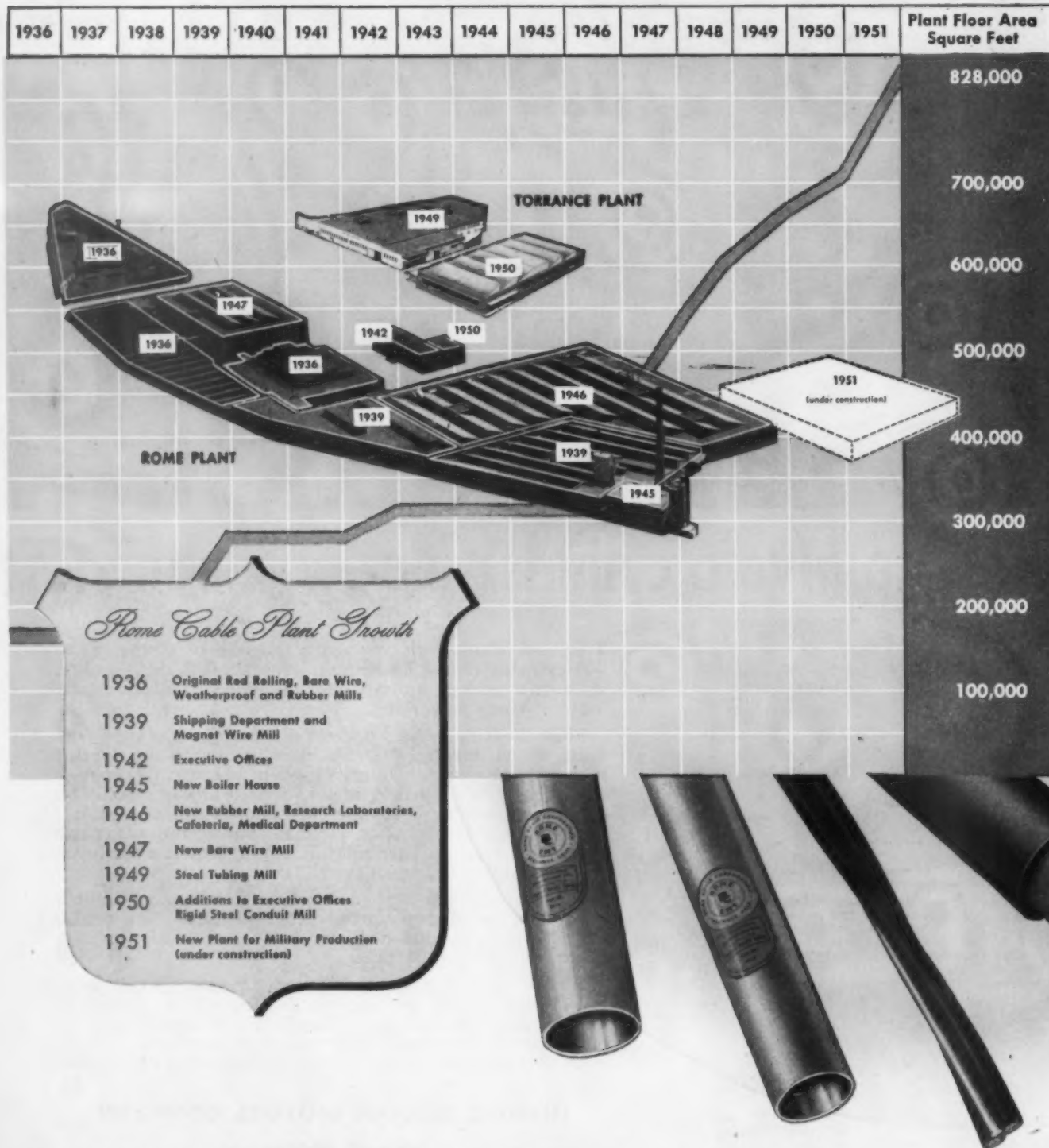


## HOWELL MOTORS

HOWELL ELECTRIC MOTORS CO., HOWELL, MICH.

Precision-built industrial motors since 1915

# 1936 - 1951



## FROM BAR TO FINISHED WIRE...FROM SHEET TO FINISHED TUBE

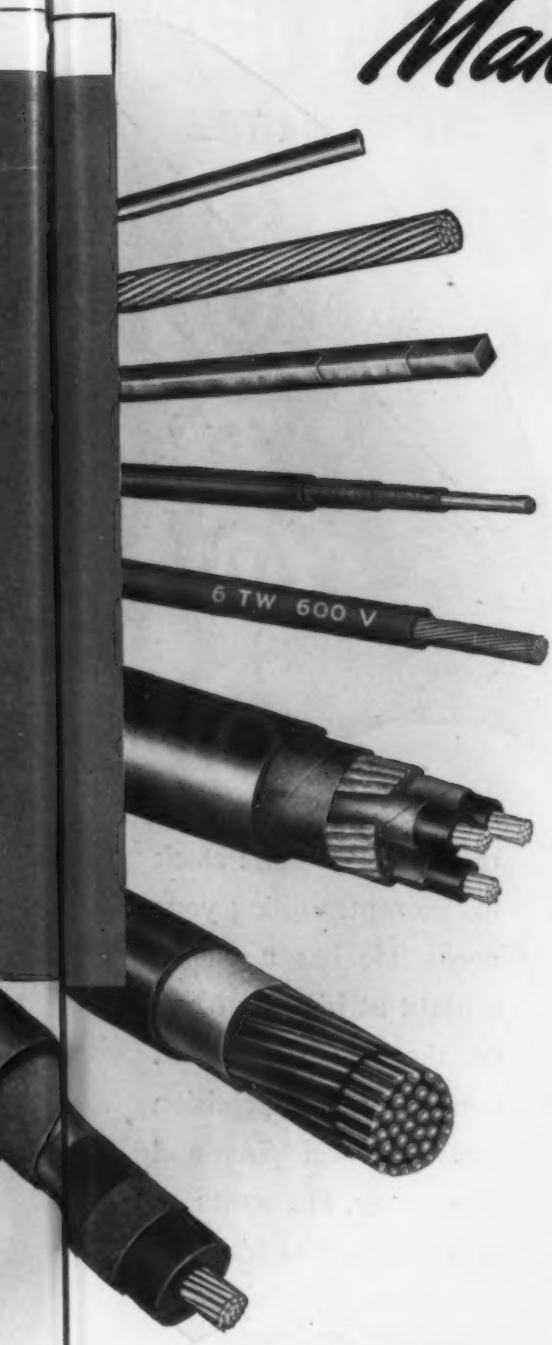
In the manufacture of wires and cables, as well as steel conduit, control of Rome Cable quality is a step by step process. Starting with basic forms... copper wire bars and sheet steel... Rome Cable products are manufactured entirely within its own plants. Equipment of the latest design, capable research and engineering, plus rigid inspection assure you of uniformly high quality.

Rome Cable offers, also a personalized service... based upon intimate contact between buyer and seller. Strategically located

sales offices and warehouses across the nation bring Rome Cable as close to you as your telephone. In this period of defense priority, material shortages are acute and delivery requirements cannot always be met. You can depend, however, upon Rome Cable doing its best and when it cannot, honestly saying so.

Write today for your complimentary copy of the attractively bound book, "The Story of Rome Cable Corporation," and learn more about Rome Cable's facilities.

# ... You've Helped Rome Cable Make The Years Count



Fifteen years ago this July, we made our first shipment of wires and cables to the electrical industry. Your ready acceptance of Rome Cable products since that time has more than justified our confidence in that first shipment.

Today, electrical power surges through Rome wires and cables of many types, in many places . . . powering vital industry, lighting cities, safeguarding life, bringing convenience and comfort to homes throughout the land.

Burrowing deep for vital minerals, carrying heavy power loads from city to city, turning the wheels of the nation's industry . . . Rome wires and cables are unfailingly at work.

When the farmer flips his barn switch for that 4 A.M. milking . . . when a hundred and one electrical conveniences are called into use . . . Rome wires and cables are at work.

When television gives you a ringside seat, when an electric mixer whips up a cool summer drink . . . or, a neon sign steers you toward a highway hamburger . . . Rome wires and cables are at work.

Yes, even when a telephone voice directs an artillery barrage into Korean hills . . . the vital thread of communication may well be a Rome product. For, today Rome Cable is, again, producing for defense.

So, for fifteen years Rome Cable has steadily grown in meeting your ever-increasing needs. Rome research and engineering have designed better cables, have maintained dependable, high quality . . . to give you of the electrical industry only the best.

At this milestone in our progress, we, again, dedicate our future to ever higher quality of product and the desire to serve you who have made these years count.

ELECTRICAL CONDUCTORS AND STEEL CONDUIT  
OF BETTER QUALITY

***It Costs Less To Buy the Best***

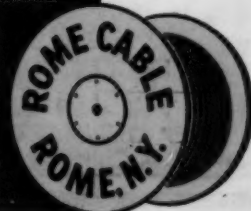
**ROME CABLE**

*Corporation*

ROME • NEW YORK

and

TORRANCE • CALIFORNIA



# The SAFETY OF ALLEN<sup>®</sup> HEAD SCREWS SAVES YOUR TIME



There's safety in positive, non-slip driving, weld-like grip under vibration and stress and absence of protruding heads. These features protect your own employees, the product you make and the people who use it. Allen<sup>®</sup> Head screws and keys help keep both men and machines on the job.



## SCHEDULE 5 PIPE RECOMMENDED TO CONSERVE STAINLESS STEELS

Because nickel and other alloys are in short supply, more and more emphasis is being placed on light-walled Schedule 5 stainless steel pipe. This new pipe, produced by several mills, recently received the approval of the Correlating Committee of the American Standards Association.

When compared with heavier pipe, such as the well-known Schedule 40, this new pipe schedule provides two or three times the pipe footage per pound of stainless steel. Thus, in addition to conserving critical alloys, Schedule 5 stainless pipe gives outstanding savings in cost for material. Made from the standard stainless analyses as set up by the American Iron and Steel Institute, the pipe offers full corrosion resistance in every respect.

From the strength standpoint, Schedule 5 stainless pipe is satisfactory for the vast majority of applications in industry. It will provide an excellent margin of safety with working pressures up to 150 psi. In the smaller diameters, below 2" O.D., working pressures can be considerably higher.

Comparison of the wall thickness of Schedule 5 with Schedules 40 or 10 stainless pipe shows that the new schedule gives a considerably larger inside diameter, and thus a larger internal cross-sectional area. The outside diameters of the pipes are identical, which facilitates the use of Schedule 5 with existing installations of Schedule 40 or Schedule 10 pipe.

More detailed technical information about Schedule 5 light wall stainless pipe can be secured from various steel producers. One mill, The Carpenter Steel Co., has issued a set of data sheets giving pertinent information about Schedule 5. Copies can be secured by writing to the company's Alloy Tube Division, Union, N. J.

1 1 1

## CALUMET AND HECLA ENTERS STEEL TUBING FIELD

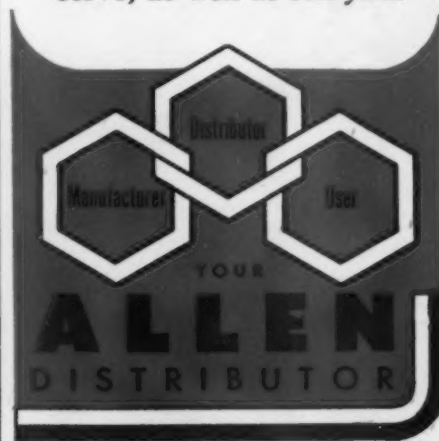
The Wolverine Tube Division of Calumet and Hecla Consolidated Copper Company has expanded into the field of steel tubing. An agreement has been concluded between Calumet and Hecla and the Karmazin Products Corporation of Wyandotte, Michigan whereby the Wolverine Tube Division has exclusive rights to produce tubes by the patented forming and brazing processes of the Karmazin Products Corporation.

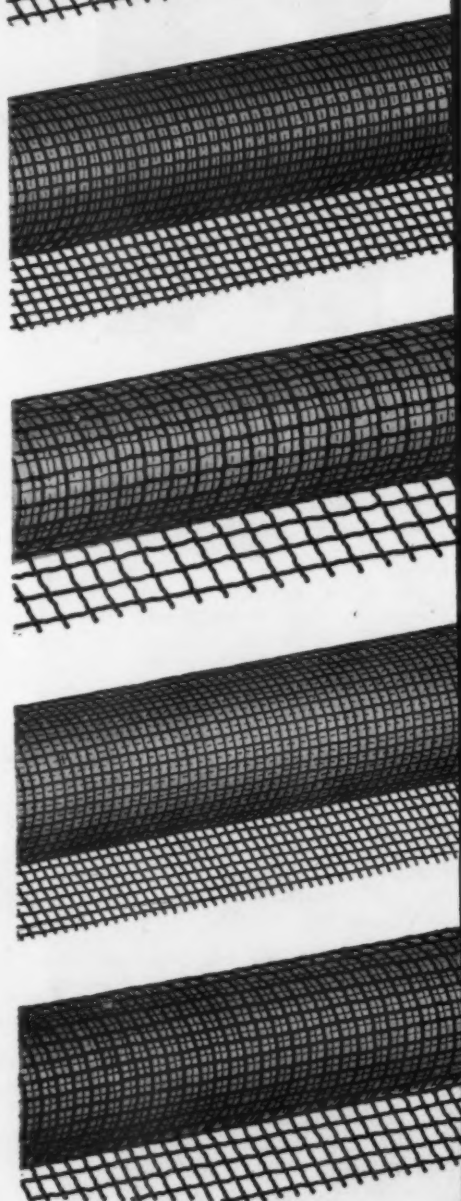
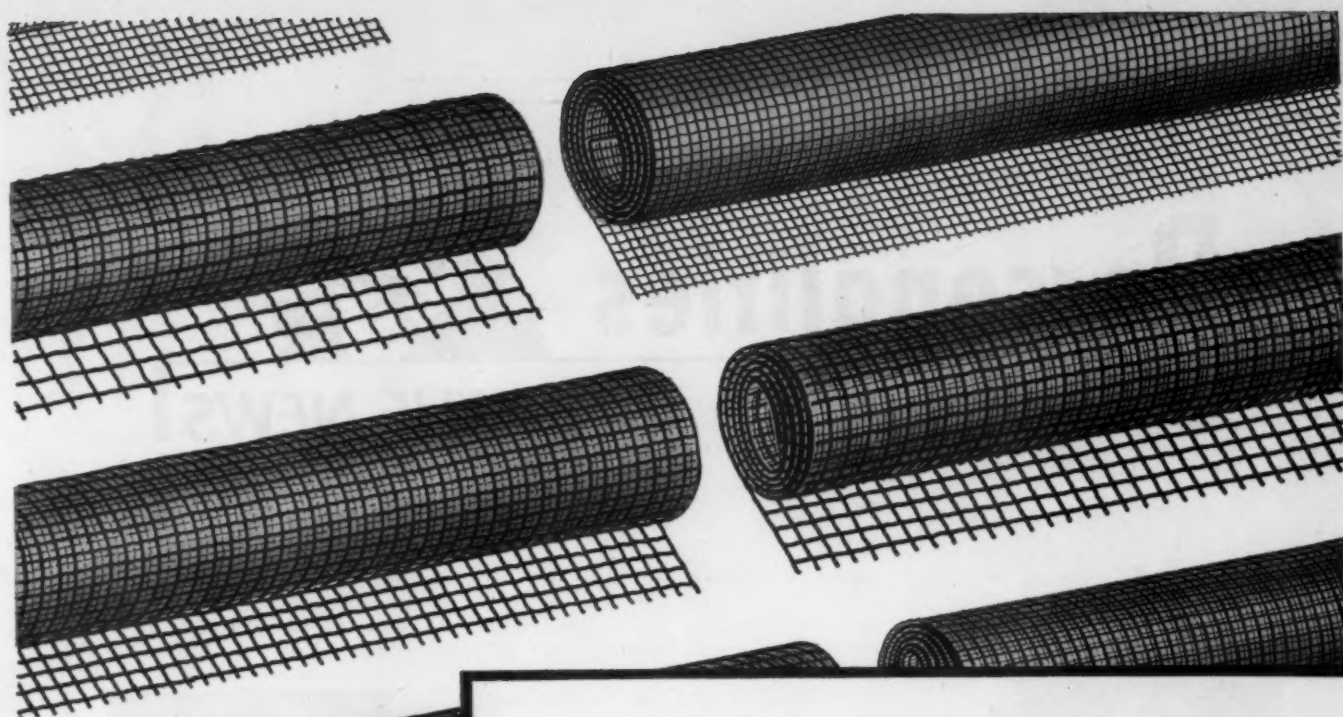
This exclusive license will substantially increase the scope of the Wolverine Tube Division's operations as the Division will now be able to manufacture brazed tubes of both ferrous and non-ferrous metals. At the present time the Division fabricates copper, copper-base alloy and aluminum tubing.

# Your ALLEN<sup>®</sup> DISTRIBUTOR'S KNOW-HOW SAVES YOUR TIME



He does more than carry the fullest possible stock for promptly filling your needs. He has a wealth of data at his finger-tips on the applications and correct use of precision screws, dowel pins and pipe plugs. He wants to serve, as well as sell you.





## BRASS AND COPPER WIRE CLOTH

*Have you a "DO" order?*

When you need Industrial Wire Cloth or Strainer Cloth for a Defense Order, your nearest Chase Warehouse is the place to inquire for it.

Chase Brass and Copper Wire Cloth is available in meshes from No. 2 to No. 100 and in varying gauges for a wide variety of industrial uses. The mesh is uniform and the wires double crimped to keep openings square and true.

One of the 23 Chase Warehouses or the four Chase Sales Offices will give you full information on the type of wire cloth best suited for your production problem. Send the coupon below for free Chase book describing the full line of Chase Brass and Copper Wire Cloth.

**Chase**  **BRASS & COPPER**

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Atlanta	Cincinnati	Houston	Los Angeles	New Orleans	Providence	Seattle
Baltimore	Cleveland	Indianapolis	Milwaukee	New York	Rochester	Waterbury
Boston	Dallas		Minneapolis	Philadelphia	St. Louis	(sales office only)



FREE Chase Book lists mesh, diameter of wire, per cent of open area, weight and other important data.

Chase Brass & Copper Co., Dept. PU751  
Waterbury 20, Conn.

Please send me your FREE book on Chase Brass & Copper Wire Cloth.

Name \_\_\_\_\_  
Position \_\_\_\_\_  
Firm \_\_\_\_\_  
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City \_\_\_\_\_ State \_\_\_\_\_

# Personalities



## IN THE NEWS

**J. S. Roscoe** has been appointed Director of Purchasing of the Lincoln Electric Company, Cleveland, O. Mr. Roscoe has been with Lincoln since 1924 when he



**J. S. Roscoe**

was graduated from the Ohio State University with a degree in electrical engineering.

He has been continuously active since then as a welding engineer and district manager, responsible for welding development in Syracuse, Pittsburgh, and Chicago. As District Manager in Syracuse from 1925-44 he pioneered in the application of automatic welding. One of his early developments was the automatic carbon arc welding of copper cooling fins to engine cylinders. He also established the procedures for welding the first all-welded freighter on the Great Lakes.

As district manager in Pittsburgh from 1944-47 he played an important part in the early development of automatic welding on steel mill equipment. Procedures established for surfacing rolls and other mill parts have since become a vital part of mill maintenance programs. He has been district manager in the Chicago area since 1947, from where he moved to Cleveland to assume responsibility for purchasing.

**H. H. Hitchens**, Assistant Purchasing Agent for Bethlehem Steel Company, Bethlehem, Pa., for the past 15 years, retired on June 1. Mr. Hitchens had been with Bethlehem for 34 years, spending his entire career in the purchasing department.

**Joseph H. Lambrix**, who has been in charge of purchases for The Electric Auto-Lite Company, Toledo, O., since 1948, has been named Vice President and Director of Purchases. Mr. Lambrix joined Auto-Lite in 1923. He was connected with the purchasing department of Auto-Lite Battery Corp. in Niagara Falls, N. Y., from 1927 until 1942, when he joined the purchasing department in the Toledo offices of Auto-Lite.

**Arthur M. Adler**, formerly Director of Purchases and Works Manager of Helene Curtis Industries, Inc., Chicago, Ill., has been promoted to **Vice President**.

**Edward Mayor** has joined C. A. Dunham Company, Chicago, Ill., to replace Robert J. Wirth, Assistant Purchasing Agent. Mr. Wirth resigned his position to return to active duty with the United States Navy.

Members of Dunham's purchasing and sales departments gave Lt. Wirth a farewell dinner recently on the eve of his departure to assume duties on the



**Lt. Wirth and P. A. Robert A. Wolff**

U.S.S. Hancock. Lt. Wirth saw extensive service in the Pacific during World War II on the U.S.S. Norman K. Perry.

Purchasing Agent Robert A. Wolff also announced the following personnel changes: John W. Mayer, former service engineer has been added to the department to handle procurement of machinery and materials relative to defense contracts; Larry T. Hayes has been promoted from within the department to Assistant Purchasing Agent.

**N. Martin Steffens**, a veteran of 33 years in the purchasing field, has been named Assistant to the President of **Geuder, Paeschke & Frey Co.**, Milwaukee, Wis.



**N. Martin Steffens**

Mr. Steffens started with G.P. & F. in 1917 as a clerk in the purchasing department. From 1935 to 1946 he was Assistant Purchasing Agent, and from 1946 to 1948 Assistant Director of Purchases. From 1948 to 1950 he was Director of Planning and Production.

**Andrew M. Kennedy, Jr.**, Manager of Purchasing for Westinghouse Electric Corporation's Sharon (Pa.) works, has been transferred to the main offices in Pittsburgh to direct the company's steel procurement program. Ira G. Fox has been promoted to succeed Mr. Kennedy, and C. D. Duffy, supervisor of transportation has been named to succeed Mr. Fox as Purchasing Agent.

**Samuel H. Jones** has been appointed Purchasing Agent and Office Manager for the Newark, O., plant of Lesavoy Industries, Inc.

**Austin R. Schillinger** has been appointed Purchasing Agent at the Goodyear plant of Rogers Corporation, Manchester, Conn.

**Edwin H. Goodridge** has been promoted to General Production Manager in Charge of Production and Purchasing of the New Departure Division, General Motors Corporation, Bristol, Conn.

(Please turn to page 226)

# 5 METALS IN PRECISION-MADE REEL MACHINED WITH ONE SUNICUT OIL

The Ocean City Manufacturing Company operates Brown & Sharpe automatics on free-turning brass, aluminum, cold-rolled steel, phosphor and hardware bronze. Having used Sunicut Cutting Oils since 1941 with complete satisfaction, the plant decided a year ago to find out what other products could do. Numerous competitive oils were tested, and the best was selected for a long trial run.

But this oil did not prove satisfactory in actual use. It caused the gibs to corrode and the slides to stick. Operators found miking difficult. Downtime and rejects grew to disturbing proportions. Finally, to protect

its automatics and restore its production efficiency, the plant decided to go back to Sunicut Cutting Oils and standardized on Sunicut 11.

Sunicut 11 is a "Job Proved," dual-purpose cutting oil for automatic screw machines. Its transparency permits quick and accurate miking. Among its virtues is the fact it will not stain brass. It drains rapidly, minimizing carry-off. And its high lubricating and cooling properties aid in prolonging tool life and improving finishes. Moreover, it protects finished parts from rust and corrosion. For other outstanding cutting oil case histories write for booklet PU-7.



**MACHINE:** Brown & Sharpe No. 2G • **METAL:** 11 ST aluminum  
**OPERATIONS:** Feed stock, center drill, counterbore, recess and countersink, tap, form and cut off • **SFPM:** 800 • **SPEED:** 3,150 rpm  
**PRODUCTION:** 250 collar housings per hr. • **CUTTING OIL:** Sunicut 11

**MACHINING PARTS** for Ocean City's "90" Automatic Reel. Sunicut 11 does not corrode the bronze gibs of the automatics, minimizes carry-off, makes miking easy. A coolant tried as an "economical" replacement failed on all three counts.



**THIS AUTOMATIC REEL** contains six types of metals . . . free-turning brass, aluminum, cold-rolled and stainless steel, phosphor and hardware bronze. Another Sunicut grade is used on the stainless steel.



**THE PRECISION PARTS** that Sunicut 11 helps to make possible are put to the test as this top-quality reel goes into action. Little does the fisherman know how much of his pleasure he owes to a cutting oil.

## SUN INDUSTRIAL PRODUCTS

SUN OIL COMPANY, PHILADELPHIA 3, PA. • SUN OIL COMPANY, LTD., TORONTO AND MONTREAL



Ronald H. Burnett has been appointed Coordinator of Priorities and a Purchasing Agent for Monsanto Chemical Company, St. Louis, Mo. The announcement was made by Clayton A. Wolfe, Director of the Purchasing and Traffic Department.

Mr. Burnett had been Purchasing Agent for the company's plant at Nitro, W. Va. He joined the plant in 1937 in the purchasing department and was transferred to the purchasing department in 1939. Following a 3-year military leave of absence for service in the Navy, he was appointed Assistant Plant Purchasing Agent in 1945. He became Plant Purchasing Agent in 1947.

Russell E. Starbard has been appointed a buyer in the purchasing department of Norton Company, Worcester, Mass. He replaces Robert F. Kirkpatrick who has been called into service in the Air Force. Mr. Starbard comes to the purchasing department from the company's grinding machine division where for 10 years he was engaged in methods, sub-contracting, jobbing and industrial engineering work.

Dr. George Keith Funston, at one time Director of Purchases for Sylvania Electric Products, Inc., and now President of Trinity College, Hartford, Conn., will become the next President of the New York Stock Exchange. Dr. Funston headed Sylvania purchasing from 1940 to

1944. Much of the time he was on leave of absence with the War Production Board in Washington, where he served as a special assistant to the chairman.

Fay Wood is now Purchasing Agent for Blaw-Knox Construction Company at the Pine Bluff (Ark.) Arsenal.

Donald J. Norbeck, formerly Purchasing Agent, has been named Director of Purchases and Assistant Production Manager of York-Shipley, Inc., York, Pa. He is succeeded as Purchasing Agent by Robert B. Dundore.

O. O. Barton has been appointed priorities supervisor of the General Electric Company's chemical department, according to an announcement by F. C. Tucker, Purchasing Manager of the chemical department. In his new position Mr. Barton will be responsible for matters dealing with government priority regulations.

Mr. Barton came to the company in 1928 immediately following his graduation from Kansas State where he received a B.S. degree in business administration.

Starting with General Electric in Schenectady, N. Y. on the business training course, Mr. Barton was transferred to the accounting section of the Meriden, Conn. plant in January, 1931. A year later he was transferred to the accounting section in Pittsfield. In 1946 Mr.

Barton returned to Meriden as assistant to the manager and in 1949 was transferred to the Taunton, Mass. plant as supervisor of production and order and stores, a position which he held until his present appointment.

Andrew T. Greeley has been appointed to the new post of Director of Purchases for The Rudolph Wurlitzer Company's North Tonawanda (N. Y.) division. He



Andrew T. Greeley

was formerly in charge of purchasing for the Manning, Maxwell & Moore, Inc. factory at Watertown, Mass. for sixteen years. Active in the buying phase of industry throughout his business career, Mr. Greeley was also formerly associated with Durant Motors, General Instrument Company, and De Jur-Amsco.

E. A. Getman will continue in the position of Purchasing Agent for the Wurlitzer plant, and no changes are planned in the departmental staff.

Lester N. Read, formerly with the Puro-lator Company, has been named General Manager and Purchasing Agent of the Triangle Rubber Company, New York, N. Y.

Harold J. Hidley has been promoted to Purchasing Agent for the Oldsmobile Division, General Motors Corporation, Detroit, Mich. He has been with General Motors for 31 years.

W. E. Haight will be Assistant Purchasing Agent in charge of productive and service replacement parts. F. A. Wiles will have a similar position, in charge of nonproductive buying and defense subcontracting. C. F. Dernies has been placed in charge of steel procurement.

Randolph W. Westerfield, Chief Purchasing Agent of Hallicrafters, Inc., Chicago, Ill., has been named Director of Procurement. J. C. Mathews, formerly Assistant Director of Purchases with Capehart-Farnsworth Corp., has been appointed Purchasing Agent. Robert F. Halligan has been named Chief Purchasing Expediter. Roman Possley, formerly Assistant Chief Purchasing Agent, has been appointed Assistant to the Director of Procurement.

Thomas W. McNeill, General Purchasing Agent of American Radiator and Standard Sanitary Corporation, Pittsburgh, Pa., has been promoted to Vice President.

(Please turn to page 228)

## United States Steel Corporation Subsidiaries

W. EVERETT HOLLAND  
DIRECTOR OF PUBLIC RELATIONS  
PITTSBURGH DISTRICT  
GRANT 1-4225

429 Fourth Avenue, Pittsburgh 19, Pa.

### FOR IMMEDIATE RELEASE

PITTSBURGH, PA., - The following purchasing department appointments have been announced by United States Steel Company:

#### Chemicals, Ferro Alloys and Oils

J. E. Hanly, purchasing agent

#### Construction Materials and Services

R. J. MacKenzie, purchasing agent  
R. D. Crowley, assistant purchasing agent

#### Electrical and Mechanical Equipment

R. M. Brown, purchasing agent  
W. W. Crawford, assistant purchasing agent  
B. D. McMillen, assistant purchasing agent

#### Iron and Steel Scrap

R. F. Dyson, purchasing agent

#### Mill Supplies

J. A. Wrieth, purchasing agent  
A. E. DeWall, assistant purchasing agent  
S. A. Witt, assistant purchasing agent

#### Nonferrous Metals

A. Siragusa, purchasing agent

#### Office Equipment and Supplies

R. Muirhead, purchasing agent

#### Raw Materials

E. R. Sherrick, manager  
J. S. Hess, assistant manager

-o0o-

# SWITCHEROO...



**a vital quality in  
any folding carton!**

Ever see SWITCHEROO at work?

A customer walks into a store, starts to reach for an accustomed brand when suddenly SWITCHEROO . . . some eye-appeal, try-appeal, or buy-appeal in an adjoining carton makes her hesitate . . . re-consider . . . and finally select the competing product.

That's SWITCHEROO, Mister. The tireless salesman at the point of sale . . . the greatest hazard between you and your regular customers.

Let a United Board & Carton specialist show you a sample of your product in a folding carton with plenty of SWITCHEROO. No cost. No obligation. Just write or wire.

**A few of the nationally famous companies who use  
United Board & Carton services**

Seiberling Latex Products Co.  
Diamond Match Co.  
The Electric Auto-Lite Co.  
Armour & Co.

The Kroger Co.  
The Taylor Wine Co.  
New Process Gear  
Lever Bros. Company  
Dr. Hess and Clark, Inc.  
Hickok Manufacturing Co.



## UNITED BOARD & CARTON CORPORATION

156 SOLAR ST., SYRACUSE, N. Y.

Carton Plants: SYRACUSE, VICTORY MILLS, COHOES, N. Y., SPRINGFIELD, O.

Board Mills: LOCKPORT, THOMSON, N. Y., URBANA, O.

*Precision-Molded*

## RUBBER PARTS & PRODUCTS

Natural and synthetic rubber molded parts, including boots, bellows, diaphragms, seals, rings and rubber-to-metal bonded parts are molded at Acushnet to the most exacting specifications.

Long experience, specialized technical know-how, complete modern equipment and positive quality control assure sustained uniform precision. The Acushnet plant is sufficiently extensive for mass production, yet small enough to give every order individual attention. All Acushnet rubber parts are made on order, none are stocked.



*Rubber Handbook  
sent on request*

**Acushnet**  
**PROCESS COMPANY**  
New Bedford, Mass., U. S. A.

Address all communications to 770 Belleville Ave., New Bedford, Mass.

**Percy Coomber**, of Distillation Products Industries, and past president of the Purchasing Agents Association of Rochester, has been named to the purchasing staff of the Massachusetts Institute of Technology, Cambridge, Mass.

**Bryan Gouger** has been appointed Purchasing Agent of the City of Houston, Tex. He succeeds Howard Henson, who has been named purchasing consultant.

**H. F. Robert** has been made Purchasing Agent of the gas turbine division of Lincoln-Mercury Division, Ford Motor Company, Dearborn, Mich.

**Willard E. Miller** has been appointed Assistant Purchasing Agent for Elgin National Watch Company, Elgin, Ill. H. E. Corr is Purchasing Agent. Mr. Miller served with the Navy in World War II



Willard E. Miller

and later completed work for a master's degree in business administration at the University of Chicago. He was recently associated with the purchasing department of R. G. LeTourneau, Inc., Peoria, Ill.

**Cedric W. Lutz** has been appointed Director of Purchases for Gulf Oil Corporation, effective July 1. Mr. Lutz has been serving as assistant to the Vice-President in the Houston Production Division.

In his new capacity, Mr. Lutz will be in charge of all purchases made in the United States by all Gulf companies, and will be responsible for determining purchasing policies and procedures for all the companies' domestic divisions and districts.

Mr. Lutz attended the University of Arizona and University of Southern California from which he received a B.A. degree. After several years as a teacher and principal in Arizona schools, he enrolled in the Harvard School of Business Administration, being graduated with an M.B.A. degree and later teaching at that School.

Prior to coming with Gulf, Mr. Lutz had a varied purchasing experience in one of the nation's large industrial companies where he served for twelve years. In the past several years his work in the Houston Production Division has familiarized him with the production problems of the company.

Mr. Lutz, who will make his headquarters in Pittsburgh, succeeds Mr. Lee C. Bock, General Purchasing Agent, who died earlier this year.

# Introducing "Formbrite"

## **Specially processed copper alloys with a money-saving grain structure**

Formbrite is a metallurgical development of The American Brass Company applied to copper alloys, particularly brass. A special rolling or drawing process plus a special heat treatment impart a superfine grain structure to the metal.

Because of its fine grain and hard surface, substantial economies can be effected in polishing and finishing. Usually only a simple color buff is required before plating.

As a drawing brass in the form of sheet or strip, Formbrite is stronger, harder and more resistant to scratching and abrasion—yet so ductile that it readily withstands deep-drawing operations.

In the form of rod and wire, Formbrite has about the same strength as regular cold heading

wire—with good ductility. It is ideal for rivets, wood and machine screws and upset products generally. A minimum tumble cleans and polishes Formbrite fastenings.

Formbrite is beyond the experimental stage. Millions of pounds have been made, sold and satisfactorily fabricated and finished. It costs no more than standard drawing or cold heading brass. If you are cold-working brass in the form of sheet, strip or wire, you will want to know more about Formbrite. Write for Publication B-39 . . . and if you'd like to compare Formbrite with ordinary drawing brass in your own polishing room, ask for the kit of two sample cups. The American Brass Company, General Offices, Waterbury 20, Conn.

9198

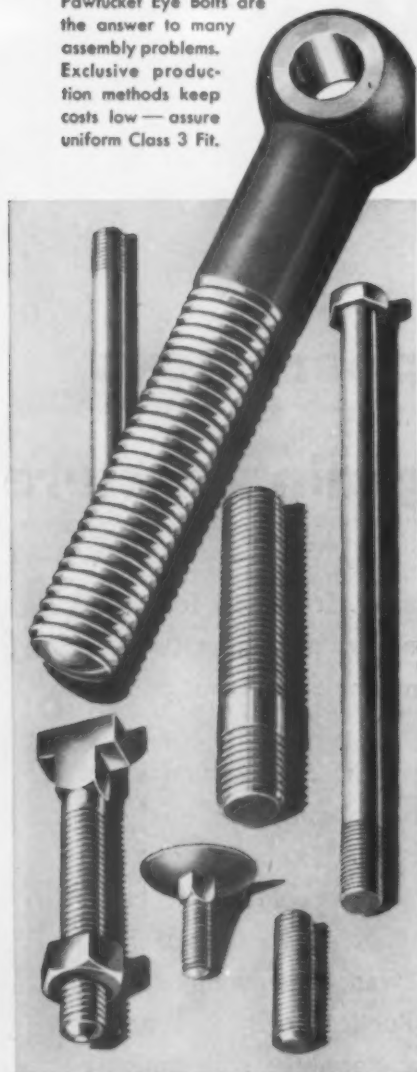
*Formbrite is a trademark of The American Brass Company designating copper-base alloys of exceptionally fine grain, combining unusual polishing characteristics with good strength and hardness, plus excellent ductility.*

# ANACONDA

the name to remember in  
**COPPER • BRASS • BRONZE**

# Looking for specialties EYE BOLTS

Accurately made in sizes  $\frac{1}{4}$ " and larger, or to your specifications, Pawtucket Eye Bolts are the answer to many assembly problems. Exclusive production methods keep costs low — assure uniform Class 3 Fit.



BETTER BOLTS SINCE 1882

Use Headed and Threaded Fasteners  
for Economy and Reliability



O. L. Cohen has been named Vice President in Charge of Purchasing of the Utility Electronics Corp., Newark, N. J.

Douglas M. Dunn, formerly Assistant Purchasing Agent, has been appointed Purchasing Agent of Chevrolet-Flint Mfg. Co., Flint, Mich.

James Ernest Craig has been appointed plant Purchasing Agent of the Owens-Corning Fiberglas Corporation's yarn plant at Anderson, S. C.

Herbert B. Sliger, formerly Assistant General Sales Manager of Commercial Solvents Corporation, New York, N. Y.,



Herbert B. Sliger

has been appointed Manager of the Purchasing Department. For the present, he will maintain offices in both New York and Terre Haute, Ind. John H. Hassmer will continue as Purchasing Agent, with headquarters in Terre Haute.

W. E. Anderson has been appointed Assistant Purchasing Agent of Sheffield Steel Corporation's plant at Sand Springs, Okla.

Louis Schmidt has been appointed Purchasing Agent for A. E. Bausenach, Inc., Buffalo, N. Y. He succeeds Robert J. Schieder, who has been appointed head of a new department in production planning and control.

Edward F. Losek has been appointed Purchasing Agent for Essential Chemicals Co., Milwaukee, Wis. He was formerly with Mallinckrodt Chemical Company.

Robert C. Kuser, Purchasing Agent for Atlantic Products Company, Trenton, N. J., has been elected a director of the company.

## AMONG THE COMPANIES YOU BUY FROM

Pittsburgh, Pa.—Wright Hoist and Ford Chain Block Divisions, American Chain & Cable Company, Inc. C. E. Witt has been appointed district sales manager with headquarters here at 3000 Liberty Avenue.

(Please turn to page 232)

# Dreaming of Perfect Trouble-free Springs?

YOU CAN GET  
THEM FROM  
"ILLINOIS"...

- ALL TYPES
- ALL SIZES
- ALL MATERIALS



## We'll Design Them for You or Make Them Ex- actly to Your Specifi- cations

Either way, you'll be assured of precision workmanship — of getting springs that are all ways good — all ways uniform — that fit in as they should in assembly and perform as they should in service.

Where we are allowed to help in the design and engineering, our specialized experience often develops better, simpler ways of meeting spring requirements — substantially reducing costs on many jobs.

Try us and see. Prompt service, large orders or small.

## Inquiries Invited



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# Here is *Exactly WHY* a V-Belt with **CONCAVE SIDES** Gives You *Longer Wear!*

To see for yourself how a V-Belt that has *concave sides* is certain to give longer wear, just make this simple test:—

Pick up any V-Belt you have at hand. Bend that belt as it bends around a pulley. As it bends, grip its sides between your fingers. Here is what will happen everytime.

If the V-Belt you are testing has *straight sides*, you can feel those sides *bulge out* as the belt bends. This out-bulge forces the sides of the belt to press *unevenly* against the V-Pulley and you naturally get *concentrated wear* just where the bulge is greatest—as shown in figure 1-A, at right.

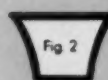
Now, make this same test with the belt that is built with *Concave Sides*—the Gates Vulco Rope!

Whereas you felt an *out-bulge* when you bent a belt with straight sides, you find that the *Concave Sides* merely fill out and become *perfectly straight*. The sides therefore press *evenly* against the V-Pulley. This distributes the wear *uniformly* across the *full width* of the belt. Naturally, this means longer belt life and lower belt costs for you!

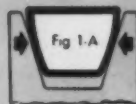
Only V-Belts made by Gates are built with *concave sides*. Whenever you buy V-Belts, be sure that you get the V-Belt with the *Concave Sides*—The Gates Vulco Rope!

## What Happens When a V-Belt Bends

Straight-Sided V-Belt



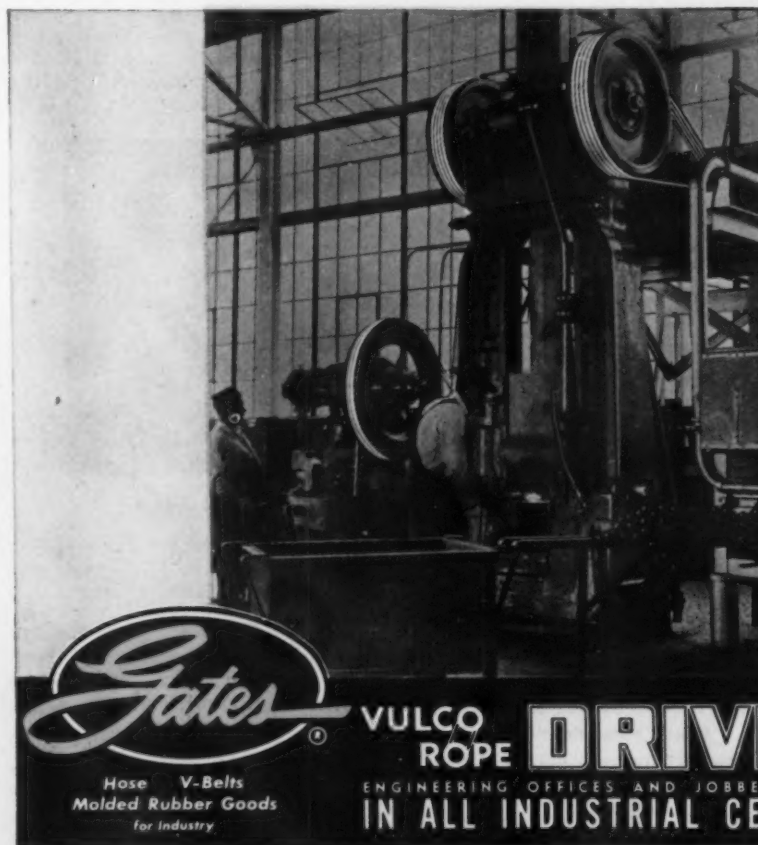
Gates Vulco Rope with Concave Sides



How Straight-Sided V-Belt Bulges in Sheave-Groove. Sides Press Unevenly Against V-Pulley Causing Extra Wear At Point Shown by Arrows.



The Concave Sides Fill Out to a Precise Fit in the Sheave Groove. No Side Bulge! Sides Press Evenly Against the V-Pulley — Uniform Wear — Longer Life!



This drop hammer in the plant of Kortick Manufacturing Company of San Francisco is operated by the Gates Vulco Rope Drives shown. Mr. W. H. Reiman, Plant Supt., says: "...a great improvement in the speed of the return stroke...gives us a positive drive without slip, yet one that absorbs the shock of picking up the ram repeatedly."

A CS-517

**Gates**

Hose V-Belts  
Molded Rubber Goods  
for Industry

**VULCO  
ROPE**

**DRIVES**

ENGINEERING OFFICES AND JOBBER STOCKS  
IN ALL INDUSTRIAL CENTERS

THE GATES RUBBER COMPANY

DENVER, U. S. A.

The World's Largest Makers of V-Belts

**YOUR DEPENDABLE SOURCE**

**FOR HIGHEST QUALITY**

## *Metal Name Plates*

Skilled craftsmanship, long experience and the finest equipment, combine here to produce basic value—*quality name plates at the right price*. For lasting identification, clearness and permanent readability in name plates and instruction plates depend on the



### Ask Us to Quote

Send a rough sketch, blueprint or sample, with specifications, for quotation—or write us fully about your requirements in name plates, instruction plates, dials, panels, scales, etc. Here standout identification and enduringly fine appearance costs no more!

#### ALUMINUM ANODIZING

We are equipped to apply this protective coating to aluminum parts and products by the exclusive Alumilite process—in a wide range of attractive colors. Your request for quotation is solicited.

## CHICAGO THRIFT-ETCHING CORPORATION

1555 North Sheffield Ave., Chicago 22, Illinois, Dept. C.

Metal Name Plates, Dials and Panels, Etched or Lithographed • Etched Metal Scales, Clock Dials, Trophy Plates, Plaques, Advertising Specialties • Etched Metal Panels for elevator and architectural uses • Coin Banks • Lithographed or Screened Plastic Name Plates or Dials • Aluminum Anodizing by the Alumilite Process.

SUBSIDIARY OF DODGE MANUFACTURING CORPORATION, MISHAWAKA, INDIANA

**Asheville, N. C.**—Graybar Electric Company. A. A. Wilson has been named manager of the company's branch here.

**Pittsburgh, Pa.**—Chicago Wheel & Mfg. Co. Don S. Grove, widely known in the mill supply field, has been named representative in the Pittsburgh area. He is located at Union Street Extension.

**Detroit, Mich.**—Ex-Cell-O Corporation. Donald H. McIver was elected vice-president in charge of industrial sales



Donald H. McIver

at a recent meeting of the board of directors. George D. Scott was elected vice-president in charge of Pure-Pak sales. Mr. McIver was formerly sales manager of the industrial division.

**Chicago, Ill.**—Mehl Mfg. Co. The Chicago office has been moved from 30 West Washington Boulevard to 30 North La Salle Street.

**Milwaukee, Wis.**—Synthane Corporation. Warren C. Stokes has been appointed to the district sales office here as assistant to Howard A. Tyner.

**Stamford, Conn.**—The Yale & Towne Manufacturing Company. A. Charles Amann has been appointed general sales



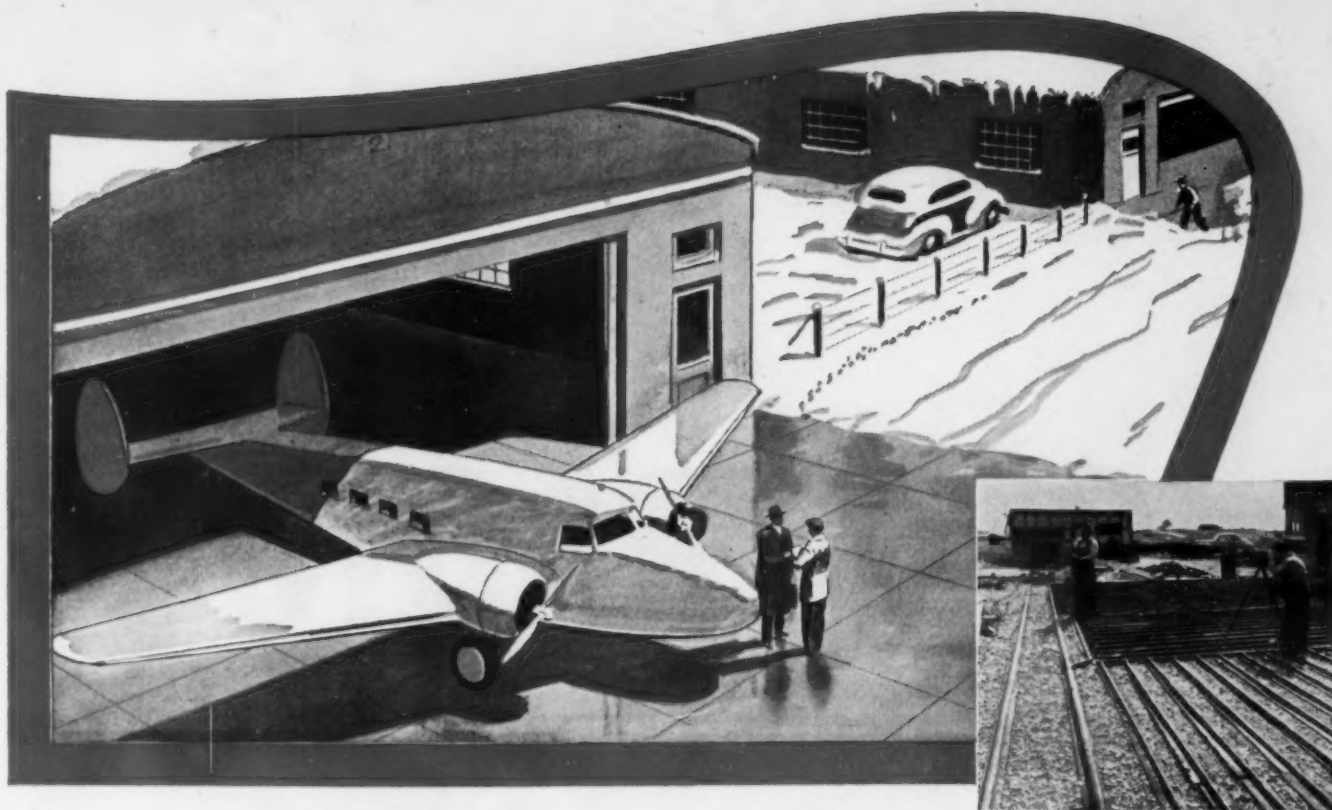
A. Charles Amann

manager of the Stamford division, succeeding Meade Johnson. Mr. Amann was formerly industrial sales manager.

**Buffalo, N. Y.**—The National Tool Company. Austin Ford Logan, 115 West Chippewa St., has been named agent for western New York state.

**New York, N. Y.**—United States Steel Company. James H. Duff has been appointed assistant manager of sales of the district office here.

(Please turn to page 236)



**The snow-shoveling system has changed...  
but the name on the pipe is an old one...**

## SPANG CW

Shoveling snow is slow, inconvenient, and labor-consuming. But the owner of an underground snow-melting system gets rid of snow as fast as it falls, merely by opening a valve.

When you're installing a snow-melting system, specify "Spang CW Steel Pipe" . . . the ideal economical pipe for all closed heating systems. It's equally good under asphalt or concrete, and lasts for years in any location.

Your men will like the way Spang CW Steel Pipe fits up . . . it bends easily and smoothly, is easy to cut and weld. And its uniform high-quality assures good, tight installations.

Specify "Spang CW Steel Pipe", the brand that's backed by our 110 years of pipe-making experience.

There's a supply house near you carrying Spang Pipe and a full line of fittings and equipment for snow-melting and radiant-heating systems. They are making every effort to meet today's great demand for Spang CW Pipe quickly and fairly.

## SPANG - CHALFANT

Division of The National Supply Company

GENERAL SALES OFFICE: Grant Bldg., Pittsburgh, Pa.

District Sales Offices: Atlanta; Boston; Detroit; Houston; Los Angeles; New York; Philadelphia; Pittsburgh; St. Louis

**SPANG**  
**CW**  
STEEL PIPE

**QUALITY**

*that is  
recognized  
wherever pipe  
is used*



# PRIME CONTRACTORS

**Let Our Fabricating Customers Help You**

**THEIR PLANTS HAVE PRESS CAPACITY TO FORM,  
DRAW OR STAMP YOUR ALUMINUM REARMAMENT JOBS**

Many of our customers have already invested in the equipment needed to handle your aluminum forming subcontracts. They are seeking defense business. They offer knowledge gained from years of making aluminum products of their own. We recommend them because we helped many of them take their first light metal steps—and served all of them as they learned their aluminum skills.

If you are a prime contractor in aluminum, many of your defense orders may require presswork. Forming, stamping, coining, embossing, drawing, shearing and stretch forming are familiar operations to these companies.

An inquiry to your nearest Alcoa Sales Office will bring prompt action. Write or phone regarding your requirements, so we can tell you about the companies whose locations can best serve your needs. ALUMINUM COMPANY OF AMERICA, 2173F Gulf Building, Pittsburgh 19, Pennsylvania.



# ALCOA

**FIRST IN ALUMINUM**

*A business built on Co-operation*



Stretch forming, shown here, is an inexpensive method of forming parts not requiring sharp radii. This process eliminates costly dies and presses—is extensively used in the aircraft industry.

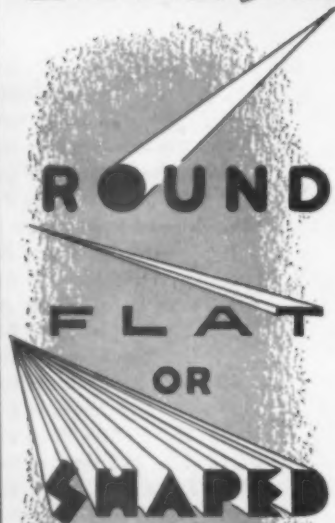
## THESE ALCOA SALES OFFICES WILL HELP YOU

AKRON 8, OHIO . . . . .	506 Akron Savings & Loan Building
ALBANY 7, N. Y. . . . .	90 State Street
ALLENTOWN, PA. . . . .	913 Hamilton Street
ATLANTA 3, GA. . . . .	1800 Rhodes-Haverty Building
BALTIMORE 1, MD. . . . .	400 Baltimore Life Building
BIRMINGHAM 3, ALA. . . . .	505 First National Building
BOSTON 16, MASS. . . . .	20 Providence Street, Park Square
BUFFALO 7, N. Y. . . . .	1880 Elmwood Avenue
CHARLOTTE 2, N. C. . . . .	616 Johnston Building
CHICAGO 11, ILL. . . . .	520 North Michigan Avenue
CINCINNATI 2, OHIO . . . . .	801 Enquirer Building
CLEVELAND 13, OHIO . . . . .	1450 Terminal Tower
COLUMBUS 15, OHIO . . . . .	40 South Third Street Building
DALLAS 1, TEXAS . . . . .	301 Thomas Building
DAVENPORT, IOWA . . . . .	503 Kahl Building
DAYTON 2, OHIO . . . . .	302 Harries Building
DENVER 2, COLO. . . . .	524 U. S. National Bank Building
DETROIT 2, MICH. . . . .	610 New Center Building
FAIRFIELD, CONN. . . . .	1333 Post Road
FORT WAYNE, IND. . . . .	1935 Lincoln Tower
GRAND RAPIDS 2, MICH., . . . .	812 Michigan National Bank Building
HARTFORD 3, CONN. . . . .	Capitol Building, 410 Asylum Street
HOUSTON 2, TEXAS . . . . .	1806 Commerce Building
INDIANAPOLIS 4, IND. . . . .	817 Merchants Bank Building
JACKSON, MICH. . . . .	1203 National Bank Building
KANSAS CITY 6, MO. . . . .	2300 Power & Light Building
LOS ANGELES 14, CALIF. . . . .	108 West Sixth Street
LOUISVILLE 2, KY. . . . .	1154 Starks Building
MIAMI 32, FLA. . . . .	1605 Alfred I. du Pont Building
MILWAUKEE 2, WIS. . . . .	735 North Water Street
MINNEAPOLIS 2, MINN. . . . .	1060 Northwestern Bank Building
NEWARK 2, N. J. . . . .	744 Broad Street
NEW ORLEANS 12, LA. . . . .	627 Whitney Bank Building
NEW YORK 17, N. Y. . . . .	230 Park Avenue
OKLAHOMA CITY 2, OKLA. . . . .	1606 Apco Tower
PEORIA 1, ILL. . . . .	415 Commercial National Bank Building
PHILADELPHIA 9, PA. . . . .	123 S. Broad Street
PITTSBURGH 22, PA. . . . .	2012 Oliver Building
PONTIAC 15, MICH. . . . .	301 Pontiac State Bank Building
PROVIDENCE 3, R. I. . . . .	815 Industrial Trust Building
RICHMOND 19, VA. . . . .	712 Southern States Building
ROCHESTER 4, N. Y. . . . .	1331 Lincoln Alliance Bank Building
ST. LOUIS 8, MO. . . . .	10th Floor, Continental Building
SAN FRANCISCO 4, CALIF. . . . .	615 Russ Building
SEATTLE 1, WASH. . . . .	1411 Fourth Avenue Building
SOUTH BEND 5, IND. . . . .	805 J.M.S. Building
SPRINGFIELD 3, MASS. . . . .	507 Tarbell-Watters Building
SYRACUSE 2, N. Y. . . . .	408 State Tower Building
TAMPA 2, FLA. . . . .	1004 Tampa Theater Building
TOLEDO 4, OHIO . . . . .	1801 Ohio Building
VANCOUVER, WASH. . . . .	P. O. Box 120
WASHINGTON 6, D. C. . . . .	1200 Ring Building
WICHITA 2, KAN. . . . .	1011 Central Building
WILMINGTON, DEL. . . . .	Delaware Trust Building
YORK, PA. . . . .	205 Manufacturers Building



Aluminum is adaptable to all kinds of presswork (blanking, piercing, drawing, embossing, coining and stamping). Aluminum discs are being blanked here for subsequent forming operations.

# PAGE WIRE



**LOW CARBON  
HIGH CARBON  
STAINLESS  
SPECIAL ALLOY  
ARMCO IRON**

**You draw the Shape  
—Page can draw  
the Wire**

—the way you want it  
for your production—whether  
it's ALL of your product,  
or only a part.

Cross-sectional areas up  
to .250" square; widths to  $\frac{3}{8}$ ";  
width-to-thickness ratio  
not exceeding 6 to 1.

**for Wire or  
Information about Wire—**

*Get in touch  
with Page!*



Monessen, Pa., Atlanta, Chicago,  
Denver, Detroit, Los Angeles,  
New York, Philadelphia, Portland,  
San Francisco, Bridgeport, Conn.

**PAGE STEEL AND WIRE DIVISION  
AMERICAN CHAIN & CABLE**

**Detroit, Mich.**—Carboloy Company, Inc. E. R. Almdale has been named manager of the Michigan district to replace P. J. Jensen who has been called to active duty with the Army.

**Hartford, Conn.**—Whitney Chain Company. James W. Anderson has been elected vice president—sales. He has been



James W. Anderson

with Whitney since 1938 and was appointed general sales manager in 1948.

**Harrison, N. J.**—Worthington Pump and Machinery Corporation. A. F. Reinking, formerly assistant sales manager, has been named manager of the steam turbine sales division.

**Cleveland, O.**—Fairbanks, Morse & Co. Another new sales and service office has been completed here at 3000 West 117th St.

**Detroit, Mich.**—General Box Company. N. W. Embry has been promoted to manager of the Detroit division.

**East Chicago, Ind.**—The Youngstown Sheet and Tube Company. Arch J. Cochran has been appointed manager of Chicago district operations.

**Long Island City, N. Y.**—Westinghouse Electric Supply Company. William H. Bingham has been appointed eastern district manager.

**Schenectady, N. Y.**—General Electric Company. Richard S. Walsh has been appointed manager of the induction motor sales division.

**Boston, Mass.**—Brown Company. General sales offices of the company, makers of Nibroc towels, have been moved from New York to 150 Causeway Street, Boston 14, Mass. A regional sales office will remain at 500 Fifth Avenue, New York city.

**New Bedford, Mass.**—Morse Twist Drill & Machine Company. C. F. Myers, former sales manager, has been elected vice-president and sales manager.

**Rochester, N. Y.**—Worthington Pump and Machinery Corporation. L. M. Evans has been put in charge of the branch office here at 1246 Sibley Tower Building.

**Houston, Tex.**—National Supply Company. Two new sales divisions have been established—the Gulf Coast Division, with headquarters here in the Commerce

Building, and the Southwest Division, with headquarters at 3109 Winthrop Street, Fort Worth.

**New York, N. Y.**—National Container Corporation. Joseph W. Quarte, vice-president, has been made general sales manager.

**Chicago, Ill.**—United States Steel Supply Company. John F. Scott has been appointed tubular products division manager of the general sales department.

**St. Louis, Mo.**—General Electric Company. The Machinery and Welder Corporation has been appointed distributor for G. E. stainless-steel arc welding electrodes.

**Charlotte, N. C.**—Osborn Manufacturing Company. A. J. Steffens, Jr., of this city has been appointed sales engineer to represent Osborn in North Carolina, South Carolina, eastern Georgia and Florida.

**Pittsburgh, Pa.**—Edgewater Steel Company. A. J. Couse, district manager of the Chicago and St. Louis territories, has been named assistant to the vice-president and general sales manager, with headquarters here. D. W. Odiore has succeeded Mr. Couse as district manager.

**New Brunswick, N. J.**—Industrial Tape Corporation, subsidiary of Johnson & Johnson. George A. Fitzgerald has been appointed sales manager of automotive products. John L. Callahan has been named merchandising director.

**Chicago, Ill.**—The Lamson Corporation. V. C. Story has been named Chicago



V. C. Story

regional manager and will head up the Chicago, St. Louis, and Dallas districts.

**Chicago, Ill.**—Bemis Bro. Bag Co. New manager of the Chicago general sales division is R. V. Scott, formerly in the company's branch at Buffalo, N. Y. He succeeds the late Harvey W. Clements.

**New York, N. Y.**—Sterling Electric Motors, Inc. Joseph P. Foley, Charles E. O'Leary and Raymond S. Portner have been added to the staff of the district office here.

**Greene, N. Y.**—Lyon-Raymond Corporation. George G. Raymond, Jr., has been named executive vice-president and general sales manager.

(Please turn to page 238)

Points the  
finger  
at hidden  
fires . . .



Slow-burning fires may smolder for hours before they generate enough heat to set off fire detecting devices. But they can be spotted within a few seconds by a *Kidde* smoke detecting system.

A single *Kidde* Multi-line Smoke Detector System can protect one room or many rooms in the same building. A central electronic control board tells the exact location of the fire—and transmits a warning to your fire control headquarters or the local fire department.

You can combine this efficient *Kidde* Smoke Detector System with a *Kidde* CO<sub>2</sub> Fire Extinguishing System. See your nearest *Kidde* representative or write for full information.

# Kidde

Walter Kidde & Company, Inc., 747 Main St., Belleville 9, N. J.  
Walter Kidde & Company of Canada, Limited, Montreal, P. Q.

**SPECIFY**  
*Evans*  
**"WHITE-TAPE"**  
IN 6 FT. • 8 FT. OR 10 FT. LENGTHS



Quality features packed into every inch of this outstanding white tape:

the best **WHITE TAPE** made at the lowest price yet

Snow-white blade with bold, legible, jet-black numerals and graduations. Graduated in 32nds for first 6 inches.

Sturdy die-cast case heavily chrome-plated, calibrated for quick reading inside and outside measurements.

Blade 1/2" wide made of finest high carbon steel—tempered—Bonderized—enamelled—baked.

Blade replaceable in seconds—without tools—without even opening case. And Evans replacement blades cost far less.

Exclusive Evans automatic brake gives smoother push-pull action with absolutely no "creeping" of tape into case.

Underside is white too. Mark with ordinary pencil, remove mark with flick of thumb.

Every "Evans White-Tape" is unconditionally guaranteed.

Check these list prices:  
10-ft. \$1.49 8-ft. \$1.19 6-ft. 98¢

**Evans & CO. • NEWARK 5, N. J.**

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Prices higher in far west and Canada. Order from your tool distributor.

Makers of Evans Folding Rule and "The Folding Yardstick"

**"HAVE NEVER WORKED LOOSE  
On Over 3000 Pumps!"**  
—says this manufacturer about  
**ZIP-GRIP®**  
*Self-Locking*  
**SET SCREWS**



**Williams Machine & Tool Co., Omaha, Neb., writes...** "The ZIP-GRIP® Self-Locking Set Screw eliminates use of nut, and spot facing. Not one has worked loose on 3000 pumps built and in use now about one year."

**Send for FREE Demonstrator that Shows You Why...** over 125 Manufacturers adopted ZIP-GRIP® Self-Locking Set Screws in one year's time.

With your ZIP-GRIP® Action Demonstrator we'll also send you illustrated Data Sheet and offer of Engineering Test Samples to suit set screw application conditions that have been puzzling you.

\*Pat. Pending  
Makers of  
**SETKO**  
SET SCREWS

**Set Screw & Mfg. Co.**  
142 Main St. Bartlett, Ill. (Chicago suburb)  
We specialize in Solving Puzzling Set Screw Problems.

**Chicago, Ill.**—Simonds Abrasive Company. A new warehouse has been opened here at 3323 W. Addison St. A new warehouse has also been opened in Detroit at 17155 Conant Avenue.

**Dayton, O.**—Buckeye Tools Corporation. E. B. Maynard has been appointed sales manager.

**Houston, Tex.**—Tennessee Eastman Company. John Bernard Thompson, Jr., has been appointed sales representative for the chemical sales division, in charge of the company's recently opened office in the State National Building here.

**New York, N. Y.**—Lamson Corporation. Mills N. Ripley has been appointed New York regional manager. The regional office has been moved to larger quarters at 295 Madison Avenue here.

**Chicago, Ill.**—The Liquid Carbonic Corporation. Frank G. Jones has been ap-



Frank G. Jones

pointed sales manager of the Gasweld and welding supply division. Mr. Jones has been in the welding supply field for more than 16 years. He joined the Liquid organization in 1948.

**South Lyon, Mich.**—Michigan Seamless Tube Company. Robert A. Armstrong has been named executive assistant to the president. He retains his post of vice-president in charge of sales.

**Pittsburgh, Pa.**—Westinghouse Electric Corporation. Thomas R. Lawson has been appointed sales manager of industrial products.

**St. Louis, Mo.**—E. C. Atkins and Company. T. W. Potter, formerly located at Pittsburgh, will now represent the company in St. Louis. George A. Hines will succeed Mr. Potter in the Pittsburgh area.

**New Brighton, Pa.**—Townsend Company. Edward T. Brown has been appointed special representative with headquarters here.

**Waterbury, Conn.**—Chase Brass and Copper Company. Bruce A. Dean, formerly with the Mengel Company, has been elected vice-president in charge of sales.

**Milwaukee, Wis.**—Century Electric Company. A district sales office has been established here at 2400 W. Clybourn St. William Helm is district sales manager and head of the office.

(Please turn to page 240)



## Why monkey around with inferior tubing?



**Bundyweld** Tubing, double-walled from a single strip. Exclusive, patented beveled edge affords smoother joint, absence of bead, less chance for any leakage.

**Why fuss** around with the costly production delays, poor performance and other monkey business an inadequate tubing can get you into?

Let Bundyweld show you what tubing features really are!

This multiple-wall type of Bundy® tubing is double-rolled from a single strip.

No other like it. It's extra-rugged, easy to form and highly resistant to vibration fatigue. It's thinner walled, yet stronger walled, won't leak under pressure or burst under normal strain.

For help on any application of small-diameter tubing, why not check Bundy Tubing Company today?

# Bundy Tubing Company

DETROIT 14, MICHIGAN

World's largest producer of small-diameter tubing  
AFFILIATED PLANTS IN ENGLAND, FRANCE AND GERMANY

# FOREST CITY FOUNDRIES GRAY IRON CASTINGS



**Now extensively mechanized, our  
TWO LARGE FOUNDRIES  
are prepared to  
DO IT AGAIN!  
better than ever**

During World Wars I and II, The Forest City Foundries Company produced great volumes of gray iron castings for the manufacture of necessary equipment. Today we are better equipped than ever for the production of Quality Castings . . . SAE or ASTM, plain or alloyed . . . for both defense and general industrial purposes.

Member: Gray Iron Research Institute  
Gray Iron Founders' Society, Inc.

*The* **FOREST CITY FOUNDRIES** *Company*  
2300 WEST 37TH STREET • CLEVELAND 13, OHIO  
TELEPHONE YOWER 1-5040

**Pittsburgh, Pa.**—Westinghouse Electric Corporation. Mark F. Slusser has been named administrative assistant, industrial products sales.

**Naugatuck, Conn.**—United States Rubber Company. Willard deCamp Crater has been appointed assistant sales manager of Marvinol vinyl resins for the Naugatuck chemical division of the company.

**Washington, D. C.**—General Electric Company. E. E. Hinson of the chemical department has been assigned as sales representative here, with headquarters at 806 15th St., N W.

**Buffalo, N. Y.**—Hyster Company. J. W. Morgan has been transferred from Peoria, Ill., to the industrial truck sales division and will be manager of the North Central district with headquarters here.

**Waterbury, Conn.**—The Bristol Company. Wm. Magenau has been appointed field sales manager, mill supply division.

**Mount Gilead, O.**—The Hydraulic Press Manufacturing Company. O. Wendell Macy has been appointed sales manager of the hydraulic power division.

## INDUSTRIAL DEVELOPMENTS

**Barreled Sunlight Paint Company**, Providence, R. I., has started work on a five story addition to its plant, and a one-story addition to the laboratory building. The expansion will make possible an increase in production of up to 20%.

**Skilaw, Inc.**, Chicago, Ill., has purchased the controlling interest in Loud-Wendel, Inc., Middleport, N. Y., maker of wood saws, dado sets and industrial knives.

**Defecto Scales, Inc.**, Brooklyn, N. Y., has purchased the Yale scale business of the Philadelphia Division of The Yale & Towne Manufacturing Company.

**United States Steel Products Company** has exercised an option to purchase 23.1 acres of land in Pennsauken Township, Camden County, N. J., as a site for the eventual construction of a steel container plant.

**Carboloy Company, Inc.**, Detroit, Mich., became the Carboloy Department of General Electric Company on June 30 in a move designed to materially facilitate expansion of overall Carboloy Dept. activities.

**Rockwell Manufacturing Company**, Pittsburgh, Pa., has acquired Ohlen-Bishop Manufacturing Company, Columbus, O., manufacturer of woodworking saws and saw blades.

**Hewitt-Robins, Inc.**, will increase its foam rubber capacity by 50% through the acquisition of the rubber plant of the Belfer Corp., Staten Island, N. Y.  
(Please turn to page 242)

THE WIRE-HAIRED FOX TERRIER came from England where it was once used by hunters in routing foxes from their hiding places. Lively, affectionate, and quick to learn, the Fox Terrier has been a very popular dog for many years.



A Pedigree is Fine  
but when it pays off  
It's Important!

LIKE purebred dogs, Union corrugated containers have a pedigree—an unbroken line of control going all the way back to Union-owned forests and mills.

But the important thing is that this pedigree *pays off* to users of Union boxes. Pays off in uniform quality, less breakage, and fewer returns.

That's because Union specifies and controls every step in manufacture. You can be sure that every carload of Union boxes measures up to the same standard of samples submitted or of previous orders.

The Sweets Company of America knows the importance of this, and ships its famous Tootsie Rolls to all America in Union corrugated boxes.



Dependable Packaging  
Since 1872



# UNION Corrugated Containers

## UNION BAG & Paper Corporation

Principal Offices: WOOLWORTH BLDG., NEW YORK 7, N. Y.

Corrugated Container Plants: SAVANNAH, GEORGIA • CHICAGO, ILLINOIS • TRENTON, NEW JERSEY

JULY, 1951

Please mention *PURCHASING* Magazine when writing to advertisers.

241

more  
than **80** OAKITE  
CLEANING  
MATERIALS  
to help speed your production

## Short of Skilled Help?

Here's one way to solve one of your toughest problems! On all your production and maintenance cleaning operations—call in your local Oakite Technical Service Representative. His skilled in-plant assistance will help show you the way to speed up such jobs as:

- Tank cleaning
- Machine cleaning
- Electrocleaning steel
- Electrocleaning nonferrous metals
- Pre-paint treatment in machines
- Pre-paint treatment in tanks and by hand
- Steam-detergent cleaning
- Barrel cleaning
- Burnishing
- Better cleaning in hard water areas
- Paint stripping
- Pickling, deoxidizing, bright dipping
- Treating wash water in paint spray booths
- Rust prevention
- Coolants and lubricants for machining and grinding

## D. O. Subcontractors!

**FREE** Send for interesting booklet "*Some Good Things to Know About Metal Cleaning.*" Oakite Products, Inc., 54 Thames Street, New York 6, N. Y. No obligation.

SPECIALIZED INDUSTRIAL CLEANING  
**OAKITE**  
MATERIALS • METHODS • SERVICE

Technical Service Representatives in Principal Cities of U. S. & Canada

Standard Stoker Company, Inc., New York, N. Y., has changed its corporate name to Read Standard Corporation.

Olin Products Company, Inc., has been formed to distribute Olin cellophane in the packaging field. The company, a subsidiary of Ecusta Paper Corporation of Pisgah Forest, N. C., will have temporary headquarters at 270 Park Ave., New York, N. Y.

Regal Ware, Inc., is the new name of the Kewaskum Utensil Company, Kewaskum, Wis.

The Borden Company's chemical division has announced plans to construct a formaldehyde and liquid urea resin manufacturing plant on the outskirts of Demopolis, Ala. It will be the first plant in the southeastern states to produce formaldehyde.

Norton Company, Worcester, Mass., will erect a new 6½-acre plant in Worcester for the manufacture of Norton grinding



Sketch of new Norton plant

machines. The expansion will cost \$6,000,000. Completion of the plant is planned for March, 1952.

Westinghouse Electric Corporation plans to construct an electronic tube manufacturing plant on a 70-acre site in Bath, N. Y.

Rem-Cru Titanium, Inc. has established headquarters at Midland, Pa., where the company's production, sales and research on titanium and titanium alloys are to be centered. Rem-Cru is jointly owned by Remington Arms, Inc., and Crucible Steel Company of America.

American Cyanamid Company has announced that construction will soon begin on a 64,000 square foot building in Los Angeles' central manufacturing district, to be leased for a long term of years by the company.

Sanderson-Halcomb Works, Crucible Steel Company of America, Syracuse, N. Y., has begun a \$900,000 program to expand steel making and processing facilities.

Minnesota Mining & Manufacturing Co., St. Paul, Minn., has begun work on a \$6,500,000 plant expansion program. Projects involved are located in 10 cities and 8 states. The firm is expanding facilities at Atlanta, Ga.; Bristol, Pa.; Buffalo, N. Y.; Cleveland, O.; Lemont, Ill.; Wayne, Mich.; Boston, Mass.; and Hastings, Hutchinson, and St. Paul, Minn.

Celanese Corporation of America will construct a modern chemical plant at Pampa, Tex., in the Panhandle area. The materials to be produced are used in the manufacture of yarns and plastics, synthetic rubber, explosives, pharmaceuticals and many other products.

(Please turn to page 244)



**Loyalty Test** is given every Bristol Brass alloy, to make sure it is faithful both to customers' specifications and to Bristol's frankly fussy ideas on quality. Here, in Bristol's modern laboratories, a platinum screen covered with electro-deposited copper is weighed to determine copper-content of a test piece. And here, *many* eyes watch constantly to see that all sheet, rod and wire going out of this mill is made truly "Bristol-Fashion." The Bristol Brass Corporation, since 1850 in Bristol, Conn. Offices or warehouses in Boston, Chicago, Cleveland, Dayton, Detroit, Los Angeles, Milwaukee, New York, Philadelphia, Pittsburgh, Providence, Rochester.

**"Bristol-Fashion" means Brass at its Best**

When you specify  
**BLAW-KNOX GRATING**  
 you get . . .

1  
 Rigid One-Piece Construction, easy to install.

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 Maximum open area for light and air.

3  
 Easy painting—all surfaces accessible.

4  
 Non-slip tread due to twisted bar.

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 Self-cleaning—no sharp corners to clog.  
 Write for complete specifications.

**BLAW-KNOX** Electroforged  
**GRATING AND STAIR TREADS**

**BLAW-KNOX DIVISION OF BLAW-KNOX COMPANY**  
 2075 Farmers Bank Bldg., Pittsburgh 22, Pa.

The Bemis Paper Bag Co., with plants at Vancouver, Wash. and Wilmington, Calif., a wholly owned subsidiary of the Bemis Bro. Bag Co., has become a part of the parent company.

Aluminum Company of America is building a new aluminum smelting plant, capable of supplying 170,000,000 pounds of aluminum annually, at Wenatchee, Wash. It is hoped that the first aluminum can be produced at the plant within 15 months.

Link-Belt Company has started construction of an engineering and manufacturing plant for the production of elevating,



Architect's sketch of Link-Belt plant

conveying and processing machinery on a 43-acre site at Colmar, Pa. The layout allows for future expansion to double the initial size.

Air Reduction Company will construct a new plant, costing upwards of \$10,000,000 at Calvert City, 15 miles east of Paducah, Ky. The plant will significantly increase the nation's supply of defense-vital calcium carbide.

Janette Manufacturing Company, Chicago, Ill., has purchased the sub-fractional gear-motor business of Robbins & Myers, Inc., Springfield, O.

Crucible Steel Company of America has started construction work in a national defense program that will cost an estimated \$27,250,000. The program provides for major enlargements of facilities at the Midland, Pa., works. Pig iron capacity will be increased by the construction of a new blast furnace. Enlargement of open hearth and electric furnaces will increase alloy and high-carbon steel capacity, as well as capacity for producing high alloy and stainless steels.

Cleveland Metal Abrasive Co., Cleveland, O., is expanding to increase the production of its normalized and cut wire shot approximately 50%.

Binks Manufacturing Company, Chicago, Ill., has added a pump division dealing primarily with material handling pumps.

Monsanto Chemical Company recently announced the election of Dr. Charles Allen Thomas as president. Dr. Thomas, who was prominently identified with the production of the atomic bomb and co-author of a plan for control of nuclear weapons, replaces William M. Rand, who has retired under the company pension plan.

(Please turn to page 246)



## On Battle Roads or Highways **ELASTIC STOP NUTS** Guarantee Tight Fastenings

Rough terrain and rough handling are hazards to the world famous military 'Jeep'. That's why Willys builds its 'Jeeps' and other vehicles with Elastic Stop Nuts at important points to eliminate fastener failures due to vibration.

In this vehicle the famous Red Locking Collar of the Elastic Stop Nut holds firm against vibration—reduces maintenance—on vital applications such as: accelerator hinge, universal joints, body hold down, spring shackles, radiator hold down, and air cleaner. The Red Collar grips bolt threads firmly—protects against vibration, impact, and stress reversal—prevents freezing of nuts to bolts by protecting internal bolt threads against corrosion.

Check the advantages of Elastic Stop Nuts against any other type of self-locking fastener. You'll find that only ESNA offers a complete line of thread sizes and varied nut types engineered to simplify your assembly line fastening problems and to provide your customers with maintenance-free operation.

Whether you are manufacturing equipment for rough military use or designing better performance and easier maintenance into equipment for your normal market . . . use vibration-proof fasteners. Now is the time to get full information. Write for complete product line bulletin to Elastic Stop Nut Corporation of America, 2330 Vauxhall Road, Union, N. J.



### DESIGN AHEAD WITH ESNA

#### THE FAMOUS RED ELASTIC COLLAR IS VISIBLE EVIDENCE OF LOCKING SECURITY

Threadless and permanently elastic, it provides these 4 outstanding features:

1. Protects against nuts loosening due to VIBRATION
2. Keeps locking threads CORROSION FREE
3. Provides for accurate BOLT LOADING
4. Seals against LIQUID LEAKAGE along the bolt threads

*And can be used again and again*



## ELASTIC STOP NUTS

DESIGN HEADQUARTERS FOR SELF-LOCKING FASTENERS

JULY, 1951

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245

## PREVENT ACCIDENTS



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He'll tell you why!

THE BILLINGS & SPENCER CO., HARTFORD 1, CONN., U.S.A.



\* VITALLOY STEEL  
BALL PEIN  
HAMMER

Heyden Chemical Corporation, New York, N. Y., has rebuilt its Garfield, N. J. resorcinol plant, partially destroyed by fire in February, with doubled production capacity of 600,000 lbs. annually. The company also plans to apply to the National Production Authority for a certificate of necessity to construct additional plant capacity to raise production to 1,000,000 lbs. annually.

General Electric Company will build a major addition to its Schenectady, N. Y. turbine plant in a move aimed at boosting the factory's annual output of fuel-fired generating capacity by more than 1,250,000 kilowatts. The addition will enable G.E. to produce approximately 73 turbine generators representing 5,500,000 kilowatts annually.

Mehl Mfg. Co., a division of Sydney-Thomas Corp., Cincinnati, O., has begun an extensive expansion program. The company, one of the largest custom pack-



J. J. Tiernan, Mehl Sales Manager

aging converters, has recently acquired a second plant operation in Cincinnati and two in Kentucky. The firm maintains sales offices in Chicago and New York City, and sales coverage embraces the entire country.

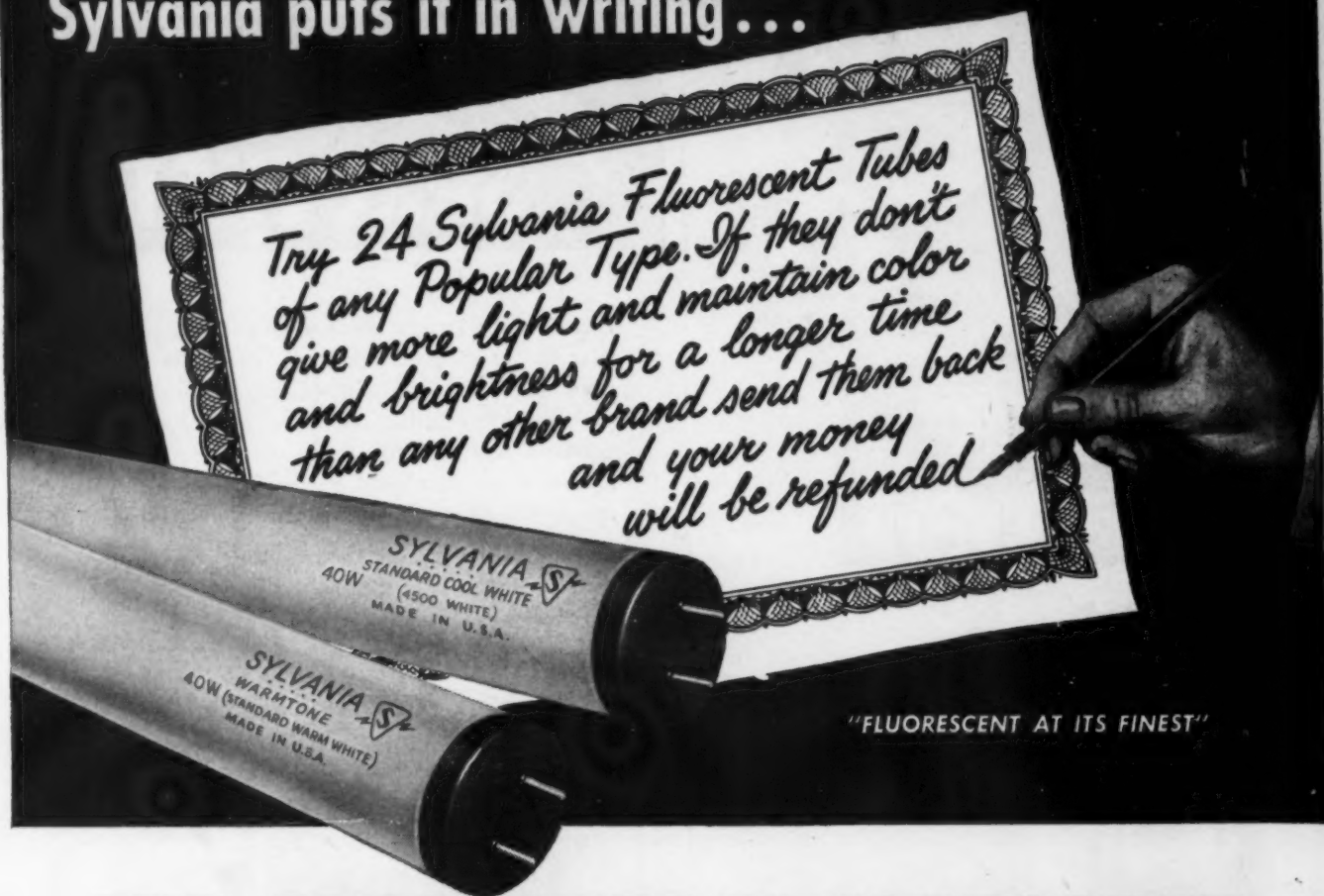
General Electric Company has transferred facilities for the molding and extruding of G-E silicone rubber parts from the chemical department plant in Pittsfield, Mass. to the Decatur, Ill. plant of the department. New equipment has been added that will enable production to be tripled.

The Hinde & Dauch Paper Company has reported that construction on its \$1,250,000 expansion program at the Detroit, Mich. plant is nearing completion.

American Petrochemical Corporation has been formed for the manufacture of essential chemicals from petroleum hydrocarbons. The announcement was made by Firestone Tire & Rubber Company and Cities Service Company. A site at Lake Charles, La., is under consideration for a new plant, the production of which ultimately would encompass the fields of plastics, synthetic rubber, additives for lubricating oil, cracking catalysts, anti-freeze and many high volume petrochemicals.

(Please turn to page 250)

Sylvania puts it in writing...



"FLUORESCENT AT ITS FINEST"

## THE STRONGEST FLUORESCENT LIGHTING OFFER EVER MADE!

Mere words aren't enough to convince you of Sylvania Fluorescent Tubes' superiority. You must try them to realize their winning performance.

So now, Sylvania stands behind that trial with the most challenging offer in the fluorescent lighting field.

Just try 24 Sylvania tubes of any Popular Type. When you do, ask for your "Certificate of Assurance." Notice their uniformity

of performance, their brightness, and their matched color appearance. Now, check them month after month...year after year. If they don't last longer, keep their true color tones, and stay brighter than any other tubes you have ever used, send them back with the certificate to your Sylvania supplier and your money will be refunded.

For maximum dependability in any lighting or electrical work, be sure to call the Electrical Contractor who displays this emblem.



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JULY, 1951

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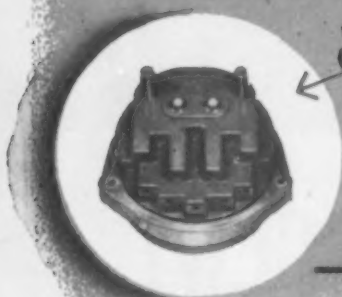
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Distributor head molded by Mack for Scintilla Magneto Division of Bendix Aviation Corporation.



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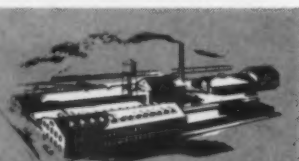
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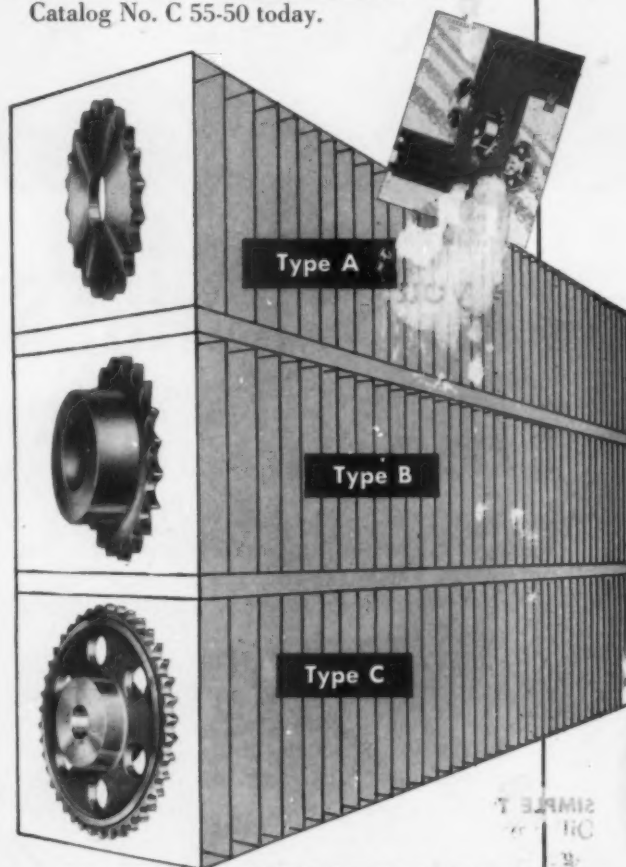
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MECHANICAL  
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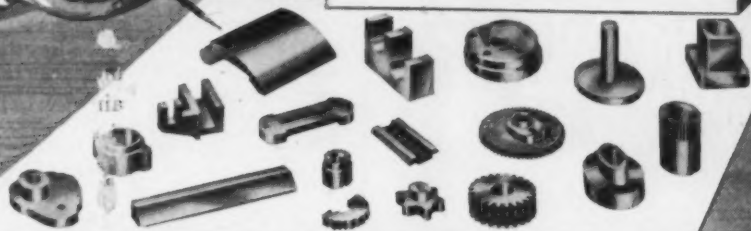
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# HIT

# BY LACK OF TIME AND PARTS?



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## OILITE Finished Machine Parts give these important advantages:

- Quick delivery
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- Low price
- Release of skilled manpower
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Oilite gives you a dependable alternate for bronze, brass, aluminum, cast iron, steel, and plastics.

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Oilite processes help you eliminate as many as twenty-four machining operations.

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Oilite products require little tooling; saving you floor space, jigs

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Oilite engineers pioneered iron powder metallurgy; their experience of more than twenty years, and Oilite's broad facilities are at your disposal.

### OILITE FERROUS-BASE BEARINGS

Heavy duty, oil-cushion, self-lubricating. Excellent for replacing your non-ferrous units of solid material.

Oilite representatives and field engineers are located throughout the U. S. and Canada. You are invited to contact the field engineer in your district or write the home office.

## AMPLEX MANUFACTURING COMPANY

*Subsidiary of Chrysler Corporation*

DETROIT 31, MICHIGAN

Besides Field Engineers, Supply Depots, too, are maintained in Principal U. S. and Canadian Cities.

## A Note to Executives

### Some facts about Oilite Products

Essentially, Oilite metal powder products constitute a new series of metals—each formulated to do a specific job. When used as replacements for tin, aluminum, copper, and other strategic materials, they often become permanent replacements.

For example, on any unit where motion occurs, Oilite provides the otherwise unobtainable feature of self-lubrication.

As with any other new material, habitual specifications should often be reviewed when considering Oilite finished machine parts. To illustrate, designers using cold rolled steel, may automatically apply the strength specifications of that material. The engineer, however, knows that strength as low as 40% of steel is satisfactory.

Another advantage of Oilite is its broad range of physical properties. Thus, when high stresses exist, Oilite engineers specify the correct material necessary to meet the requirements.

When production, including mass quantities, must be reached in record time, Oilite bearings and finished machine parts may provide you with an excellent reservoir.

*W. J. Cunningham*

President

## OILITE PRODUCTS

### OILITE PRODUCTS:

Heavy duty, oil-cushioned, self-lubricating bearings and finished machine parts in ferrous and nonferrous metals and alloys. Permanent filters. Friction units. Self-lubricating cored and bar stock.



## Gummed Tape

THE ONLY CLOSURE THAT  
DRESSES UP YOUR CARTONS



Your cartons look neater and more efficient with gummed tape. Every seam and corner is smoothly finished off with a closure of tape — "tailor made" to the job. Your shipment gains an appearance of quality that no other closure can give.

You can choose from golden brown kraft or a variety of attractive contrasting colors. You may have your tape printed, too, with your company name, trademark, or message. Each carton becomes an advertisement for you.

Your cartons have more customer-appeal when protected with gummed tape. They arrive at the customer's door in better condition . . . with their contents intact, too, sealed against dust, moisture, and insects.

**Gummed tape . . . first choice among closures**



and for smoother, faster sealing

Orange Core is now *Supple-ized*

Supple-izing is an exclusive Hudson process to make Orange Core tape more flexible. The adhesive and kraft are treated to take out the stiffness and prevent curling. Supple-izing makes Orange Core pliant and supple . . . easier and faster to handle. It helps make a neater closure, with more smoothly folded corners. Try Orange Core in your own shipping room.

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W. Scott Hassler Associates, Chicago, Ill., is the name of a new firm offering complete package design and engineering service. Mr. Hassler recently resigned as director of packaging and assistant director of purchasing of the Curtiss Candy Company.

Graybar Electric Company, Inc., has opened new eastern district headquarters in a



Graybar's Eastern district headquarters

three-story, block-square building, at Bridge Plaza North and 21st St., Long Island City, N. Y.

Cummins Engine Company, Inc., Columbus, Ind., has announced a major expansion of engine production capacity, involving new facilities to cost \$6,000,000. This third major expansion program within the past nine months will increase production capacity at Cummins at least 50% over the 1950 record high level.

1 1 1

### BOOKLET TELLS WHICH WHITE LIGHT TO USE WITH COLORS

How any of the forty popular colors will look under each of the eight varieties of white light now available is analyzed in a new book issued by Sylvania Electric Products, Inc. The book, entitled "Color Is How You Light It", includes material on the two new Deluxe colors of fluorescent white light perfected since publication of the first Sylvania color and light book two years ago.

The book is aimed at assisting all concerned with the selection of lighting and the coordination of light and color. "With an understanding of the basic reactions of color pigments to light, and knowing the color properties of the seven white fluorescent tubes as well as the incandescent bulb's characteristics," it is pointed out, "anyone can now plan the decoration of an office, store, etc., and have it create the warm or cool atmosphere desired." Copies are available from Sylvania Electric Products, Inc., 87 Union St., Salem, Mass., at 50¢ each.

1 1 1

### PROPER USE, CARE AND HANDLING OF LADDERS

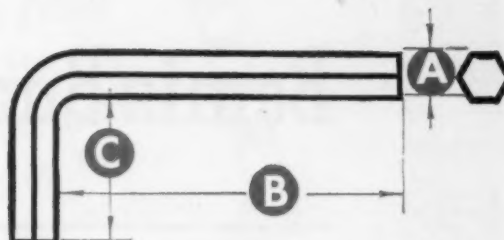
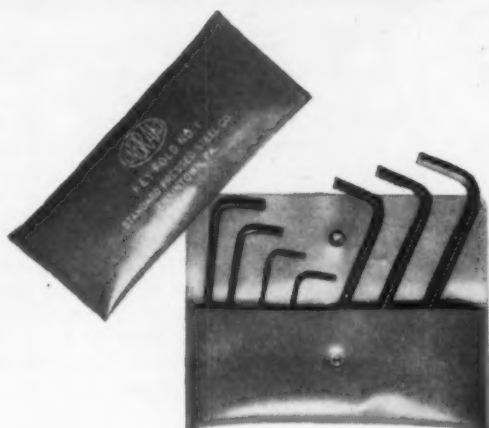
Buyers and users of wood ladders are offered an informational booklet entitled "The Right Ladder for Every Job" by the American Ladder Institute. It is a digest of service to expect from the ladders purchased, together with suggestions for their care and use. Recommendations for special uses, tips on painting, maintenance and safety, and storage of ladders are included. Requests should be addressed to the institute at 666 Lake Shore Drive, Chicago 11, Ill.

(Please turn to page 252)

**"STANDARD"  
recommends  
STANDARDS\***

**UNBRAKO**

**SOCKET SCREW KEYS**



#### UNBRAKO HEXAGON KEYS

Quality wrenches developed to utilize to the maximum the quality built into UNBRAKO Socket Screws. Interchangeable for the various types of screws listed and suitable for use with all standard makes of socket screws.

Illustrated is the UNBRAKO Key Fold No. 1. Plastic case with 7 UNBRAKO keys for hollow set screws from #8 to 1/2" dia., socket cap screws from #4 to 3/8" dia., flat head cap screws from #6 to 3/8" dia., as well as a number of sizes of shoulder screws and pressure plugs. List price, .75 ea.

SOCKET SCREW DIAMETER					A	C	B		LIST PRICES			
Hollow Set Screws	Socket Head Cap Screws	Flat Head Cap Screws	Stripper Bolts	Pipe Plugs			Short Arm	Long Arm	Short Arm		Long Arm	
							Order by Symbol	List Prices	Order by Symbol	List Prices		
No. 4					.050	1/2	1 3/4		AS	3.10		
No. 5 & 6		4			1/4	3/8	1 3/4		BS	3.15		
No. 8	No. 4	6			3/4	3/8	1 3/4	3 3/4	CS	3.20	CL	4.20
No. 10	No. 5 & 6	8			3/2	3/8	2	3 3/4	DS	3.30	DL	4.30
1/4	No. 8	10	1/4		1/8	3/4	2 1/4	3 3/4	ES	3.40	EL	4.40
3/8	No. 10	1/4	3/8	1/8	3/2	7/8	2 1/2	4 1/4	FS	4.60	FL	5.60
1/2	1/4	3/8	3/8	1/8	3/4	7/8	2 3/4	4 1/2	GS	5.70	GL	6.70
3/4	3/8	3/8	3/8	1/8	3/2	1	3	4 3/4	HS	6.90	HL	7.90
1	1/2	7/8	1/2	1/4	1/4	1 1/8	3 3/4	5 1/4	IS	8.00	IL	9.00
1 1/4	3/4 & 7/8	1/2	3/8	3/8	3/4	1 1/4	3 3/4	6	JS	11.50	JL	13.50
1 1/2	1/2	3/8 & 3/4	3/4	1/2	3/8	1 3/8	4 1/4	6 3/4	KS	17.00	KL	22.00
1 3/4	3/8				1/2	1 1/2	5 1/4	8 1/4	LS	28.50	LL	38.50
2	3/4 & 7/8			3/4	3/4	1 3/4	5 3/4	9	MS	40.00	ML	55.00
2 1/4	1			1	3/8	1 7/8	6 1/4	9 3/4	NS	55.00	NL	75.00
2 1/2	1 1/8 & 1 1/4			1 1/4	3/4	2 1/8	7 1/4	11 1/4	OS	75.00	OL	105.00
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★ One of a series listing Standard UNBRAKO Socket Screw Products sold by your local UNBRAKO Distributor. If you want reprints of this and other advertisements in the series, ask for them on your business letter-head.

**STOP specifying "specials"! LOOK first at UNBRAKO standards!**

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This versatile burlap tubing saves labor, time and material in packaging. The 2-way-stretch makes it fit almost any shape and a wide range of package sizes. Ask the Bemis Man about Bemis Tite-Fit Tubing.



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## MAKING STEEL CASTINGS RADIOGRAPHICALLY SOUND

Steel castings can be made radiographically sound without recourse to padding or chills providing the distance from the perimeter of the riser to the edge of the plate is four and one-half times the casting thickness. This information, based on studies of steels having 0.20-0.35 percent carbon, and cast as plates with a width-to-thickness ratio of at least 3 to 1, is contained in a report now available from the Office of Technical Services of the U. S. Department of Commerce.

The report, prepared by the Naval Research Laboratory, is part of a continuing study of the basic foundry methods. In the current study the relationships between thermal gradients and casting soundness were investigated through temperature measurements.

PB 101 392, *The Contribution of Riser and Chill-Edge Effects to the Soundness of Cast Steel Plates*, 21 pages including graphs, can be purchased from the Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C., at 75 cents per copy. Orders should be accompanied by check or money order.

1 1 1

## ASA STANDARD FOR BRUSHES IN ELECTRICAL MACHINES

An American Standard for Brushes for Electrical Machines, C64.1-1950, has been approved by the American Standards Association, 70 East 45 Street, New York 17, N. Y.

The standard contains definitions, dimensions and tolerances, and test procedures needed for the manufacture and use of these brushes.

A brush, as used in the electrical manufacturing industry, is a conductor, usually composed in part of some form of the element carbon. It serves to maintain an electrical connection between stationary and moving parts of a machine or apparatus.

Definitions are given for five types of brushes—carbon, carbon-graphite, electrographitic, graphite, metal-graphite. Brushes are also classified and defined into three groups—fractional horsepower, industrial, and split brushes.

Diagrams illustrating various types of brushes, their corners, ends, edges, and shoulders are included. Shunt terminals for brushes to be used in reaction or box type holders are also illustrated in the standard.

An appendix at the back of the standard contains a spring design data form sheet.

This standard is a revision of American Standard Carbon, Graphite, and Metal-Graphite Brushes, C64-1935. The National Electrical Manufacturers Association undertook the sponsorship for the revision of the 1935 edition. Under the procedures of the American Standards Association all those who had an interest in the standard were represented on the committee doing this work.

(Please turn to page 256)

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**SHORTEST  
WAY**


*See This New*  
**Doehler-Jarvis**  
16mm Sound Motion  
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*See it in your own*  
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**IT'LL TAKE PLENTY OF  
FIGHT  
TO WIN THIS  
PRODUCTION BATTLE**


Are your machines in top working order . . . ready for the long, tough production battle ahead? . . . fully protected against sudden failures? With delivery of new equipment often months in the future, you may soon find your old machines worth their weight in gold.

One of the easiest and surest ways to put new fight in your old equipment is to replace inferior or worn bearings with new, industry-proven Aetnas.

Tough, friction-free Aetnas are setting new standards for dependability plus reduction in power costs, maintenance and down-time in plants from coast-to-coast. Inevitably, the net results are substantial production boosts at less cost per unit.

Call your nearest Aetna distributor or write us today. It might be your best protection against the challenge that faces the machines you use or the machines you make.

**AETNA BALL AND ROLLER BEARING COMPANY**  
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There's a precision-accurate Detecto Scale for your specific weighing and counting need. The Detecto helps increase production, yet assures you maximum accuracy by making slightest weight discrepancies immediately visible.

**DETECTO-GRAM RATIO COUNTING SCALE**  
Another Detecto-Gram Scale to speed counting operations. Model #1743 has a special counting tray attached to the beam for use when counting in odd amounts.



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MAKERS OF FINE SCALES SINCE 1900  
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SCALE ENGINEERS IN ALL PRINCIPAL CITIES

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**SAVES TIME  
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PREVENTS INJURIES**

With this great new tool, one man can pull wires through a conduit on a job that formerly required the combined efforts of four men. Tool fits every type of pulling job — makes the tough ones easy. Hand puller is detachable, and fits both sizes of fishtape. Hundreds of enthusiastic users know that the Little Giant Puller saves them time — makes them money.

**TWO TOOLS IN ONE \$16.95  
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TERMINALS?

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**FOR WAFFLE BAKERS?**



**FOR WING GUNS?**

Relax—you can get them simply by taking advantage of the experience of our engineers. Chances are good that the answer you need is already in our files. If it isn't, we'll get it for you—in a hurry!

We have a wealth of information on heating problems—information it might take you weeks or months or even years to develop on your own. That's because we're specialists at engineering and controlling electric heat. Our men work at it every day . . . for many different manufacturers . . . of many different products.

As a result, we're uniquely qualified to help you—on both civilian production and defense contracts. You'll find TK\* Heating Units in everything from waffle bakers to butter warmers, roasters to defrosting apparatus, teakettles to flatirons.

And, as we proved in World War II, we're equally at home with heating elements for guns, gun directors, instrument panels, boat galleys and a host of other aircraft, marine and submarine applications.

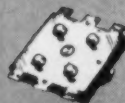
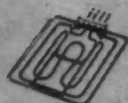
So, when you need fast answers, turn your electric heating questions and problems over to us. Rest assured they'll be in good hands!

# Heating Units

\*T. M. REG. U. S. PAT. OFF.

## TUTTLE & KIFT, INC.

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A SUBSIDIARY OF FERRO ENAMEL CORPORATION



MONOTUBE SURFACE UNITS • OVEN UNITS • TK INFINITE CONTROL • SWITCHES & SELECTORS • WATER HEATER UNITS • FLATIRON UNITS • INDUSTRIAL UNITS



**UNIVERSAL  
ELECTRIC**

**38  
SIZES**

**HIGH FREQUENCY  
ELECTRIC**

**77  
SIZES**

**PNEUMATIC**

**75  
SIZES**

**190  
MODELS!**

**Thor**

# HAS THE WIDEST SELECTION OF PORTABLE POWER SCREW DRIVERS AND NUT SETTERS

Yes, Thor offers 190 models—a type and size for every application—universal electric for standard and heavy duty jobs—high frequency electric for extra heavy duty applications—pneumatic tools for operations where air is available. See your Thor distributor for a demonstration, or call your Thor branch. Independent Pneumatic Tool Co., Aurora, Ill.

**Thor**

**PORTABLE POWER  
TOOLS**

**ELECTRIC • PNEUMATIC**

Belt Sanders

Bench Grinders

Chipping Hammers

Drills

Drill Stands

Grinders

Electric Hammers

Hoists

Impact Wrenches

Nibbler

Nut Setters

Paving Breakers

Polishers

Rammers

Rivet Hammers

Rock Drills

Sanders

Saws

Screw Drivers

Sump Pumps

Tappers

Valve Refacers

Valve Reseaters

## 99 NEW STANDARDS ADDED TO ASA PRICE LIST

Ninety-nine new and revised American Standards are listed for the first time in the latest edition of the price list of American Standards published by the American Standards Association.

This list contains more than 1180 standard specifications, methods of test, and symbols and abbreviations in civil engineering and construction, mechanical engineering, electrical engineering, safety codes, ferrous and nonferrous materials and metallurgy, rubber, textiles, mining, pulp and paper, photography, motion pictures, and gas burning appliances.

Important new standards listed include a series on electric discharge lamps—general service, instant-start single-pin hot-cathode, cold-cathode, and bactericidal—electrical indicating instruments, gas water heaters, grounding-type attachment plug caps and receptacles, and safety requirements for operation of open-surface tanks. There are also two new American Standards on gears—one on nomenclature, terms, definitions, and illustrations, and the other on inspection of fine pitch gears.

Special publications offered include "Standards—Spearhead of Industrial Mobilization" a report on standardization in national defense, in company operations, in procurement, in construction, and in safety from the proceedings of the First National Standardization Conference held last November. Also included is "Standards Are Your Business," the story of the development of the ASA federation.

The 26-page list of American Standards (May 1951) can be obtained from the American Standards Association, 70 East 45 Street, New York 17, N. Y., without charge.

## PUBLISH HANDBOOK OF POWER RESISTORS

A handbook said to be the first authentic treatise on the subject of power resistors has been published by the Ward Leonard Electric Company. It is designed to furnish a practical knowledge of the construction of power resistors, and their application and performance characteristics. In addition to the eight chapters covering all phases of the subject, the book contains 55 photo and line illustrations, 15 graphs and 20 tables.

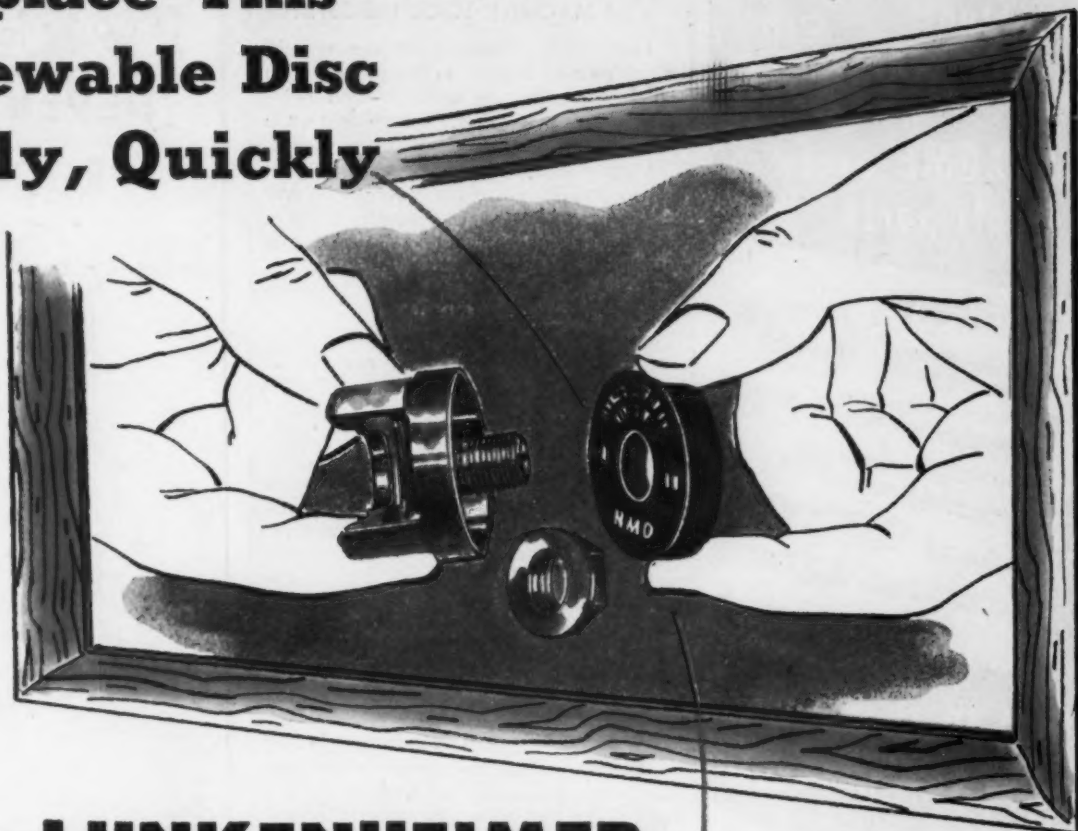
The handbook is available at \$3.00 per copy from Ward Leonard Electric Co., Dept. 040, Mount Vernon, N. Y.

## NEW GAS DATA BOOK

The Matheson Company, East Rutherford, N. J., has issued the second edition of its gas data book, covering 61 different gases. Described are the properties, toxicity, safety devices, precautions in handling, and recommended controls for each gas. New features include a cylinder valve outlet chart and temperature pressure charts for 29 different gases. The book is priced at \$2.00 per copy.

(Please turn to page 258)

# Replace This Renewable Disc Easily, Quickly



## On Your **LUNKENHEIMER** 'N-M-D' Valves



Hold your maintenance costs down with Lunkenheim Non-Metallic-Disc valves for handling steam, hot water, cold water, air and gas, gasoline, and many other fluids.

We will recommend the *right* disc for your *specific* service — and show you how Lunkenheim "N-M-D" valves give you maximum wear and tightness . . . at far less maintenance cost. The disc holder of Figure 123 is a simple slip-on type. Just slide it off the stem, remove the locknut — and switch discs. Reassemble with the new disc in place, and your valve is good as new. Four long guides assure perfect seating . . . prevent "cocking" of the disc.

Lunkenheim "N-M-D" valves have the amazing new Stemalloy\* stem, which has actually been tested at more than 300,000 openings and closings, with five steam flowing through the lines. Millions are in use — without a single wear failure.

Ask your Lunkenheim distributor about the dozens of other features that make "N-M-D" valves your best buy for composition-disc service. And write for your copy of Circular 558 to The Lunkenheim Company, Box 360M, Cincinnati 14, Ohio.

BRONZE • IRON • STEEL

**LUNKENHEIMER**  
THE ONE *Great* NAME IN VALVES

L-551-4

Important  
**SAVINGS**  
to **VOLUME** users  
of small parts

..like these



SHOWN TWICE SIZE

thanks to  
**MULTI-SWAGE**

If you need small tubular metal parts like these in large **VOLUME**, Bead Chain's **MULTI-SWAGE** Process can mean important savings to you.

**Much Cheaper Than Solid Pins**

Many prominent users of solid pins for electronic and mechanical purposes have cut costs by switching to Multi-Swaged tubular pins . . . without sacrificing strength or accuracy.

**Typical Applications—**

As terminals, contacts, bearing pins, stop pins, male-female connections, etc., in a wide variety of products such as Business Machines, Ventilator Louvers, Toys, Radio and Television Apparatus, Terminal-boards, Electric Shavers, Phonograph Pickups, etc.

Send part (up to 1/4" dia. and to 1 1/2" length) and your specs for a quotation or write for **DATA BULLETIN**.

**B®**

THE **BEAD CHAIN®** MFG. CO.

129 Mountain Grove St., Bridgeport 5, Conn.

Manufacturers of **BEAD CHAIN**—the kinkless chain of a thousand uses, for pull and retaining chains and other industrial uses, plumbing, electrical, jewelry, fishing tackle and novelty products.

**HEAVY BACKLOGS PILING UP  
ON MACHINE TOOL INDUSTRY**

Large-scale retooling in the switch-over from civilian to military production has brought pressing demands upon builders of machine tools, according to the National Industrial Conference Board.

Output of machine tools has increased by about 50% since the outbreak of war in Korea. New orders, however, have more than quadrupled, the Board points out, with the result that the industry's swollen backlog is one of the key elements in the mobilization picture.

New orders, it is noted, have been skyrocketing and are now running at seven to eight times the "very low" 1949 rates.

New orders in February were "over five times as large" as the 1945-1947 average. Only in three or four months in 1942, when the machine-tool industry enjoyed the biggest boom in its history, was the February, 1951, new-orders figure exceeded. Although they lag noticeably behind orders, shipments, too, are up considerably. They hit the highest point since 1943 in December of last year—about 35% ahead of the 1945-1947 average.

**Material and Manpower Bottlenecks**

Materials and manpower shortages, the Board points out, continue to be the major limiting factors in increasing production. "The machine-tool industry has managed to increase its working force to about 50,000 wage earners, compared to 39,000 a year ago, and has resorted to multiple shift operations. However, there continue to be numerous cases of machines partly finished, standing on the assembly floors waiting for some essential parts on which deliveries still lie weeks and months ahead," the report states.

Subcontracting has been "another expedient" employed to speed output. The overloaded machine-tool industry is already getting some assistance from other types of metal-working plants.

A recent NPA action which pools machine-tool orders provides for 70% of output to go to direct defense production. The General Services Administration will place orders with machine-tool builders for delivery to the Armed Services or to Armed Services contractors. NPA will decide the quantity and types of tools needed, but the actual ordering will be done by GSA. Builders will be able to apply DO ratings to get materials for making these tools.

Machine-tool builders will henceforth be able to use DO ratings to obtain material for "at least 70% of their production, possibly much more." The other 30% of production, the analysis notes, may go to private purchasers with rated and non-rated orders.

Pool orders make it possible for machine-tool builders "to schedule production in advance of orders received, with protection under contract for recovery of their costs on those machines for which contracts might suddenly be terminated at the end of the emergency."

"If you're looking for  
**DEPENDABLE  
PRODUCTS...**"



"then take a tip from me—

**Buy HARRISBURG  
FLANGES  
and  
COUPLINGS!"**

Experienced purchasing agents know **Harrisburg** products are dependable. Have you brought yourself up to date on **Harrisburg** Couplings and Flanges . . . prices, catalogues, and delivery? If not, please write for information to the address given below.

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STEEL CORPORATION  
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Custom-Built Quality Products in Quantity

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so are  
the B&O coals  
to meet  
them!

In fields along the Baltimore & Ohio is found an abundance of Bituminous suited to every coking purpose. The principal sources are located close to 75% of America's heavy industry!

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Write us today — Let us quote on the metal articles you use. Our prices will interest you.

Send for our Catalog #90, no obligation whatever.



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\* "Metalam" and "Benbar" \*

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JAN-P-117, Types I and II

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JAN-P-131, Amendment 3, Type I

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AN-B-20, Type II

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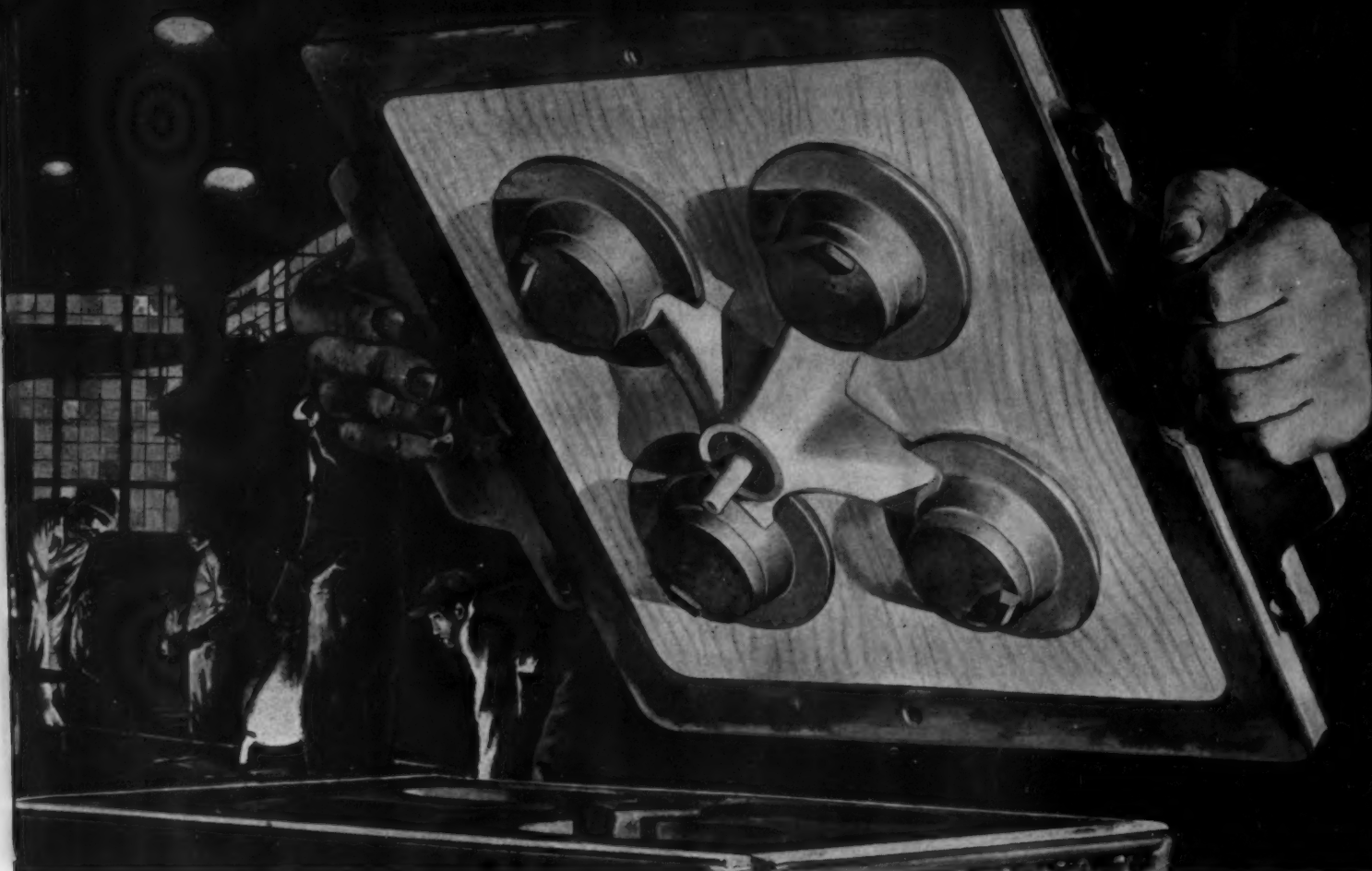
Consult us on your needs for flexible packaging, either with government-approved materials or engineered to your specific requirements.

## THE DOBECKMUN COMPANY

Cleveland 1, Ohio

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A "new dimension" in industry served by Georgia-Pacific

## CASTING DIRECTOR STARS GPX IN NEW ROLE!

This is the shape of things to come . . . and it's the toughest work of art you ever saw. From the impression this *matchplate* makes in the moulding sand comes stainless steel castings for industry's toughest jobs.

It takes a star performer to stand the gaff of being squeezed into wet foundry sand under pressure, heat and violent vibration, without cracking, changing dimension, or picking up sand on its surface. That's why the Cooper Alloy Foundry Co., world's largest producers of stainless steel castings, tested and selected Georgia-Pacific's GPX, the amazingly tough, hard, smooth, yet easy-to-work plastic-faced plywood. Because GPX required no finishing, and lasted longer, Cooper Alloy cut the cost of matchplate mounting boards by 84%, plus getting cleaner castings, fewer rejects.

GPX is working production miracles and cutting produc-

tion costs in countless other industrial applications, too . . . another example of Georgia-Pacific's "new dimension", providing special wood products for better industrial use.

**BUSINESS EXECUTIVES**—For a modern approach to plywood, lumber and door buying, write on your company letterhead for a copy of this 20-page full-color booklet—"A New Dimension", Georgia-Pacific Plywood Company, 610 North Capitol Way, Olympia, Wash.



**GEORGIA—PACIFIC**  
**PLYWOOD COMPANY**

OFFICES OR WAREHOUSES IN: Augusta, Birmingham, Boston, Chicago, Columbia, Louisville, Memphis, Nashville, Newark, Olympia, Philadelphia, Pittsburgh, Portland, Raleigh, Richmond, Savannah



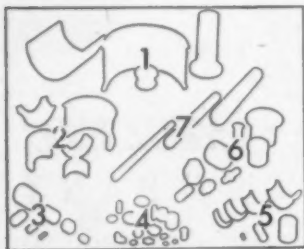
DOUGLAS FIR PLYWOOD • HARDWOOD PLYWOOD • GPX • SOUTHERN & WESTERN LUMBER • DOORS



## SLEEVE BEARINGS for Every Application at Johnson Bronze

There is one correct bearing for each application. You simply tell us what you expect of a bearing—the load it must carry—the speed at which it will operate—the type of lubrication that will be used—and other pertinent operating data. With this information Johnson engineers will tell you which type bearing will give you the greatest service for the longest time at the lowest cost. As Johnson Bronze manu-

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2. Aluminum Alloy
3. Bronze-on-Steel...copper alloy
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factures all types of sleeve bearings, recommendations are based on facts—free from prejudice. After fifty years of sleeve bearing progress Johnson Bronze today can furnish you the right bearing either from stock or made to order. Johnson engineers will gladly consult with you. Write, wire or phone.

# Johnson Bronze

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## COMPREHENSIVE CATALOG ON TEXTILE LEATHERS

Recently released by Graton & Knight Company, Worcester, Mass., and its affiliate, Dixie Leather Corporation, Albany, Georgia, is a comprehensive catalog of the textile leathers produced by them.

In size, scope and fidelity of illustration and text, the book marks a new departure in a work of its type, and consists of 24 handsomely illustrated pages. Through careful planning and studied group photography, the products on each facing page are in exact size relationship and the color of each piece of leather shown is with as realistic accuracy as modern lithography can achieve.

The book represents months of painstaking research, as exemplified by unusual stroboscopic photographs of looms in motion. These were taken at Lowell Textile Institute—at 1/20,000th of a second—and illustrate the action of the shuttle, picker, check strap, boxing leathers and other parts, the functioning of which cannot be detected by the naked eye when the loom is in operation.

The catalog is to be distributed through the Companies' field organization.

♦ ♦ ♦

## MANUFACTURING AFFILIATES OF GE BECOME COMPANY DEPARTMENTS

Six manufacturing affiliates of the General Electric Company became departments of the parent company on June 30, according to Ralph J. Cordiner, G-E president.

The affiliates are Carboloy Co., Inc., with headquarters in Detroit; General Electric X-Ray Corp., Milwaukee; Locke Inc., Baltimore; Telechron Inc., Ashland, Mass.; Monowatt Inc., Providence, R. I.; and The Trumbull Electric Manufacturing Co., Plainville, Conn.

In a letter to the company's more than 250,000 stockholders, Mr. Cordiner pointed out that the six affiliates will become G-E departments as "a part of the natural evolution of the company's organization through the years."

"These six subsidiaries enjoy a strong acceptance of their products and trade names in their respective industries. As departments of the General Electric Company, they will continue to operate under their present management and their products will continue to be marketed under their existing trade names," the G-E president said.

Carboloy Co., Inc., produces cemented carbides, under the trademark "Carboloy," as well as magnetic alloys and other materials. G-E X-Ray Corp. produces industrial and medical X-ray machines, electromedical apparatus and related accessories and supplies. Locke Inc., manufactures ceramic products for electrical apparatus and for chemical and mechanical applications, and produces such metal products as pole-line hardware, suspension hardware and fittings and special hardware. Telechron Inc., produces electric clocks for household, commercial and advertising uses; radio

(Please turn to page 264)

In the Bell & Howell  
Microfilm Recorder  
Distributed by Burroughs



# ELEVEN MICRO Precision Switches

prove their worth as

"a principle of good design"!



Arthur Spalding (right), Bell & Howell field engineer, points to one of eleven MICRO precision switches in Microfilm Recorder, during conversation with Stuart C. Plettner, Microfilm Engineer.



Hailed as one of the "business wonders of the age," the new Microfilm Recorder... manufactured by Bell & Howell and distributed by Burroughs... enables users to make, through high-speed photography, space-saving miniature film copies of business records and other printed or written matter.

The design and construction of this modern business machine demanded the utmost in precision equipment throughout—including snap-action precision switches that could be depended upon for almost incredibly accurate, sensitive, fast operation. Bell & Howell engineers consulted MICRO SWITCH, with the result that no less than eleven MICRO snap-action precision switches of varying specifica-

tions were chosen for incorporation into the design of the recorder! Some of these MICRO units are assigned functions of extreme delicacy; others must withstand high surge currents; still others are called upon to open and close through 100,000 or more cycles daily!

How well MICRO precision switches perform under the most challenging conditions is a tribute to the versatility, the accuracy, the sturdiness of construction of all MICRO units. We make a complete line of more than 4600 snap-action precision switches, each with its own characteristics. Should none of these meet your requirements perfectly, MICRO SWITCH is ready and able to engineer and build a special precision switch that will!

If you are faced with a product-design problem involving a precision-switch application, it will pay you and your design people to acquaint yourself with the aid MICRO SWITCH can offer. Just write or call MICRO SWITCH, Freeport, Illinois... or any of our branch offices.

# MICRO SWITCH

FREEPORT, ILLINOIS

A DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR COMPANY

# Get 'Em from Your Jobber!

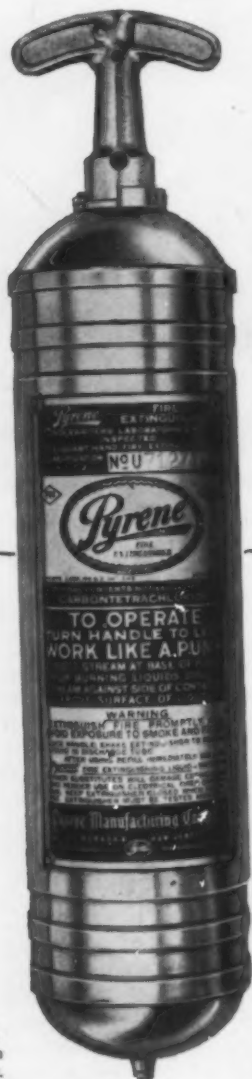
You can be sure your Pyrene\* jobber will recommend the right extinguishers for your fire hazards—because there's a Pyrene for every fire hazard! Standardize on Pyrene, a symbol of quality since 1907.

\*T.M. Reg. U.S. Pat. Off.



## CARTRIDGE-OPERATED

New stainless steel shell—now low price. No annual recharging; no acid. For fires in wood, paper, textiles. 2½ gal. size.



## AIR FOAM

Couple playpipe to hose line. Every 19 gals. of water and 1 gal. of Pyrene Foam Compound yield 200 gals. of foam! For flammable liquids and ordinary combustibles.



## VAPORIZING LIQUID

World's best all-purpose extinguishers. Safe on electrical fires, effective on flammable liquid fires. 2 qt., 1 gal. (above) pressure types. 1 qt. (large illustration) and 1½ qt. pump types.



## CHEMICAL FOAM

2½ gal. size produces about 22 gals. of fast-acting foam. Ideal for flammable liquid and ordinary combustible hazards. Seamless copper or stainless steel shell. (Pyrene Soda-Acid also available in stainless steel or seamless copper.)

And other extinguishers. Also manual and automatic fire-fighting systems.

## There's a PYRENE for Every Fire Hazard



**PYRENE MANUFACTURING COMPANY**  
578 Belmont Avenue Newark 8, New Jersey  
Affiliated with C-O-Two Fire Equipment Co.

(Continued from page 262)  
timers, range timers, industrial timing devices and synchronous timing motors. Monowatt Inc., manufactures wiring devices, cord wire and cable, industrial devices, cord sets, and others. The Trumbull Electric Manufacturing Co. produces a variety of products in the electrical control field, ranging from open knife switches to panelboards and switchboards, circuit breakers, distribution systems, theatre control panelboards, and others.

1 1 1

## SAYS COPPER PRICE MUST BE BROUGHT TO WORLD LEVEL

Until the price of copper in the United States is brought up to the world level of approximately 27½¢ a pound, from the present domestic ceiling of 24½¢, there can be little hope of halting the "syphoning out of copper from this country's normal sources of supply, which causes industrial curtailment and unemployment", C. Donald Dallas, chairman of the board, Revere Copper and Brass Incorporated, asserted recently in a communication addressed to several of the Washington regulating officials.

"As a consumer of copper, our company has always sought to keep down prices, and for this reason has opposed vigorously and consistently the copper tariff, now suspended by act of Congress", Mr. Dallas wrote. "But a realistic view of the world position forces us to conclude that there must be higher prices or continued distress.

"Under the U. S. agreement with Chile, 80 per cent of their production is fixed at a minimum price of 27½¢ a pound, and the other 20 per cent is free to be sold in world markets at any price. Therefore, it is a little absurd to think that the American mining industry—mines and men—or the Mexican, Canadian, or any other national mining industry is going to be satisfied with less.

"Freezing prices on non-ferrous metals at an artificially low level doesn't even interfere with the real causes of inflation but does interfere with supply, brings on a scarcity of goods, unemployment and black markets. The Office of Price Stabilization has been working on ceilings for brass mill scrap and copper base alloy scrap for several months. Because these have not been issued, scrap prices are at or above parity with world copper prices. Therefore, let us be realistic and pay the world price for copper. It would stimulate production and help the supply situation."

Decrying political interference with production, Mr. Dallas declared that under the right conditions, increased copper output could come with reasonable promptness from two parts of the world—Chile and Africa. He wrote:

"The basic fact is that we need Chile's copper and Chile needs the income that copper production can bring. But for some years their industry has been plagued by Communist-inspired strikes. In 1950, more than 60,000 tons of pro-

(Please turn to page 268)



## ORVAN ROGERS

*(Traffic Manager, Multi-Use Ad Builder)*

MAKES 7 TESTS  
AND CHOOSES...



*Orvan Rogers says: "Newspaper mat services are prepared to meet seasonal requirements and must reach destination promptly and safely to insure the users the most advantages possible from our product, the Multi-Use Ad Builder, so we checked for . . . . ."*

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... To be sure of meeting deadlines throughout the entire country, the Ad Builder goes by Railway Express because we consider it the safest and best way to serve our hundreds of subscribers."

*ALWAYS ASK*



**THE EXPRESS MAN**

*William J. Modlin, two years an Express Man*

*Sure*

# Stainless Pipe



1139 Ft.  
2 in.  
Schedule 5

500 Ft.  
2 in.  
Schedule 40

# is Tough to Get...

*but* using light weight **Schedule 5 Pipe**  
will almost double the supply  
—and you pay less per foot!

## What Schedule 5 Pipe Is—

A light wall pipe, Carpenter *Schedule 5* gives you more feet of pipe for every pound of scarce stainless steel. So you can quickly see how *Schedule 5* increases the amount of pipe available and reduces your cost per foot. Plus the fact that the larger I.D. means increased flow area. These cut-away sections of pipe show the actual difference in wall thickness.



*Schedule 5 Schedule 40*  
2" I.P.S. (4x)

## How Schedule 5 Reduces Costs

First saving is 40% to 50% on the cost of your pipe. And, because *Schedule 5* lets you use the next smaller pipe size, you reduce by as much as 25% your costs of valves, fittings, etc. Carpenter *Schedule 5* Pipe often permits the use of the next smaller pipe size, because of its larger inside diameter.

## How It Hooks Up With Tube

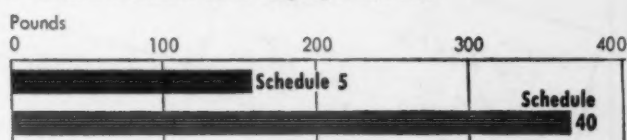
This pipe is easily adapted to use with existing lines of tubing or Schedule 40 and 10 pipe, using simple connectors available from several manufacturers.

## Why It Means More Pipe

You get *more feet of pipe* for every pound of material with Carpenter *Schedule 5* Stainless Pipe. And

we don't have to tell you how important it is to get *more steel* from every pound of nickel and chrome these days.

2" I.P.S. STAINLESS PIPE weight per 100 feet



## How It Resists Corrosion

You get the full corrosion resistance of the stainless analysis with Carpenter *Schedule 5* Pipe. It is made in standard A.I.S.I. analyses of stainless steel.

## What Pressures It Handles

All sizes of Carpenter *Schedule 5* Pipe will handle 150 psi working pressures with a good margin of safety. Sizes up to 1½" will safely handle considerably higher working pressures. Where high pressures are involved, however, Schedule 40 may be required.

**Data Sheets Give You More** information about this opportunity to get more stainless pipe for essential uses. Write for a copy now. Under today's conditions, Carpenter *Schedule 5* Stainless Pipe may help solve several big problems, including "When can I get the pipe I need?"



**THE CARPENTER STEEL COMPANY**  
Alloy Tube Division, Union, N. J.

Export Department: Carpenter Steel Co., Reading, Pa., "CARSTEELCO"

# Carpenter

## STAINLESS TUBING & PIPE



- guaranteed on every shipment

BARNES FAMOUS HACK SAW BLADES

You GET MORE of the BEST  
when you BUY...



**HACK SAWS**

THERE'S A BARNES BLADE FOR EVERY PURPOSE

**POWER BLADES...**



**Barnes' RED ARROW**

Made of genuine 18-4-1 High Speed Steel—this blade is unequalled for heavy duty use. It resists heat generated when cutting abrasive or tough materials such as high manganese, stainless or tool steels.

**Barnes' RED ROCKET**

Combining flexibility and toughness —Barnes Red Rocket Power Blade is a perfect balance between safety and productivity. Every Red Rocket blade is capable of peak production.

**Barnes' SERVICE Molybdenum**

Where fast cutting is essential—this production blade performs long and economically. It is recommended for use on low or medium alloy steels.

**HAND BLADES...**



THERE'S A BARNES' BLADE FOR EVERY HACK SAW OPERATION

Barnes Hand Hack Saws include 6 different types of blades—for use on any metal cutting operation. All Barnes H.S. Steel Blades are individually Rockwell Tested—thus providing the uniform high quality that makes Barnes Blades famous for their dependability. The Barnes' line of hack saws includes 2 high speed steel blades and 4 standard tungsten steel blades.



**W. O. BARNES CO., INC.**

1297 TERMINAL AVE.

DETROIT 14, MICH.

(Continued from page 264)

duction was lost through strikes. Another has just occurred, and has been temporarily settled at a cost of another 12,000 tons. Obviously, there is danger that the industry will grind down to a complete standstill and there will be no real benefit either to Chile or the United States from the agreements just concluded, unless the Chilean Government takes a firm stand on this strike situation.

"Because of the British Government's lack of foresight and monopolistic control, the rich Northern Rhodesian copper fields have suffered for years from lack of equipment, rolling stock, fuel and power. If some of the money spent for Socialistic experiments had been spent to increase production in Northern Rhodesia, output could, without doubt, have been stepped up in this area 100,000 tons a year by now, and it would not have been necessary for the British Government to send a mission here recently to ask us for 50,000 tons of copper from our already terrifically short supply. The only possible source from which we could obtain a tonnage of this magnitude for the British is from our own stockpile, which has been built up at the expense of our domestic economy.

"With price ceilings in effect on manufactured products, it has not yet been determined who will pay or absorb this 3¢ a pound premium for Chile copper imported into this country. Conferences are in progress in Washington which will probably result in the fabricator absorbing this subsidy with some compensating increase in ceiling price. As previously mentioned, it is doubtful if this plan will work unless all producers are put on the same basis."

1 1 1

**NEW SYNTHETIC BRISTLE HIGHLY EFFICIENT IN CARRYING AND APPLYING PAINT**

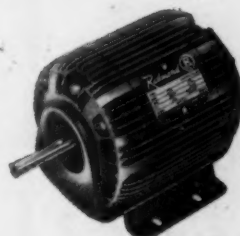
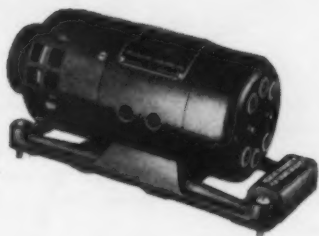
Production of a synthetic paint brush bristle that has the same rate of wear as hogs' bristle and which is highly efficient in carrying and applying paint, is announced by the brush division of the Pittsburgh Plate Glass Co., Pittsburgh, Pa.

The refined Neoceta bristle being introduced in a new Red Stripe line of brushes by Pittsburgh Plate, is said to be equal in durability, paint carrying capacity, and elasticity to hogs' bristle. Because of these properties it may be combined with hogs' bristle. Multiple small channels in the new bristle improve capillarity, retention and delivery of paint, and the spiral twist of early Neoceta brushes is completely removed in the new bristle.

Also, the new Neoceta bristle is said to be immeasurably superior to hogs' bristle in its resistance to the softening effect of water. Pure bristle will absorb up to 60% of its weight in water and consequently become soft and flabby, whereas Neoceta will absorb less than three percent of its weight in water and thus maintain its elasticity and snap.

(Please turn to page 270)

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REQUIREMENTS**



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## COLORS REDUCED TO 187 IN NEW FEDERAL COLOR CARD FOR PAINT

Adoption by the Federal Government of a uniform means of indicating paint colors culminates several years of co-operative effort by the National Bureau of Standards and the Federal Specifications Board. The new Federal Specification, better known as the Federal Color Card for Paints, reduces the more than 600 paint colors formerly used by the Government to 187 by eliminating unimportant variations of different shades. <sup>1</sup>(Federal Specification No. TT-C-595, "Colors; Ready-Mixed Paints").

The various branches of the United States Government collectively form the largest single purchaser of paint in the world. The color card, which consists of actual spots of the colors deposited on charts in a loose-leaf binder, is expected to contribute materially to governmental purchasing economies; paint suppliers will be able to supply paint more quickly and economically and the various agencies will no longer have the trouble and expense of maintaining their own color standards for distribution to prospective bidders.

Preparation of this Federal Specification was guided by the Federal Specifications Board's Technical Committee on Paint, Varnish, Lacquer, and Related Materials under the chairmanship of E. F. Hickson (retired chief of the NBS paint laboratory). The National Bureau of Standards assisted in its development in many ways.

Many of the paint spots in the new Federal Color Card for Paints have appeared previously in the U. S. Army Specification No. 3-1 Color Card Supplement. In addition to these colors used by the Department of the Navy, the Department of the Air Force, the U. S. Maritime Commission, the Veterans Administration, the Panama Canal, the Post Office Department, the Department of Agriculture, the Department of Commerce, the Department of Interior, the Department of Justice, the Public Buildings Administration, the Civil Aeronautics Administration, the U. S. Coast Guard, the U. S. Marine Corps, and other Government departments and agencies. By common agreement among these Government activities, near replicas of many colors have been avoided and a consequent reduction effected in the total numbers of colors included.

The paint color spots covered by the specification provide a simple, practical means of indicating paint colors. The specification describes a method for the rapid visual comparison of colors, to check the conformity of paint for the supplier, and in a supplement, will give fundamental colorimetric data for correlation with systems similarly specified.

### Classification and Numbering System

Each spot consists of an area 2 3/4 by 1 3/4 inches, coated with a pigmented lac-  
(Please turn to page 284)



Are you getting full value by purchasing concentrated, cost-saving cleaners and labor saving cleaning machines for your plant? Look to these places for opportunities to cut costs and increase profits.

## PRODUCTION CLEANING

Whatever you manufacture, Magnus Specialized Production Cleaners can effect important savings by increasing production, reducing rejects, eliminating hand labor and lowering per unit cleaning costs.

PURCHASE FOR PROFIT!

## MAINTENANCE CLEANING

Throughout your plant, take advantage of the savings made possible by the use of Magnus Maintenance and Janitorial Cleaning Compounds. Profit by saving costly hand labor, using concentrated cleaners, prolonging the life of your plant equipment.

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Mechanize your cleaning to save labor and increase output. Magnus "Industry-Engineered" Cleaning Machines include Continuous Conveyor types, Automatic Batch Agitating Machines and Hot Dip Tanks. Available for production or maintenance cleaning.

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Write for cost-saving recommendation on your plant cleaning problems.

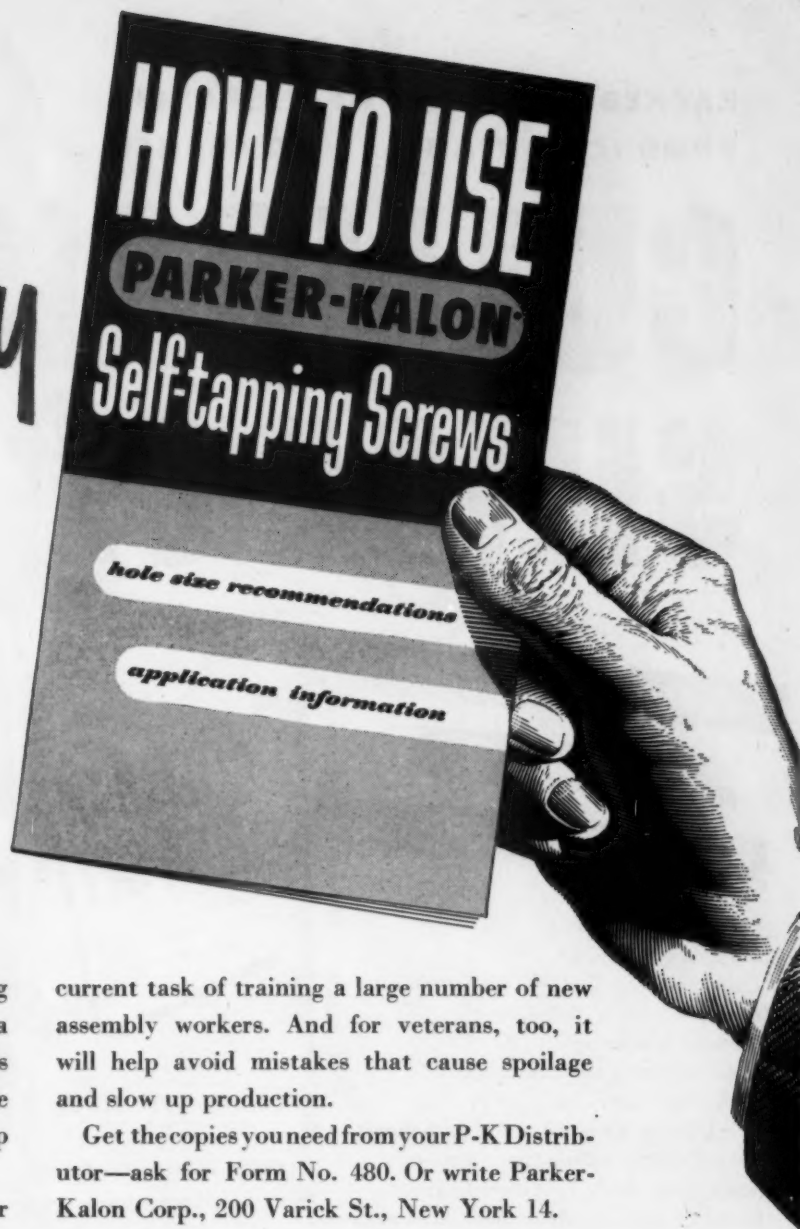
Serving Industry 30 Years

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**MAGNUS**  
CLEANERS  
EQUIPMENT

# Now Ready

a new, revised edition  
of this popular P-K  
**ASSEMBLY  
HANDBOOK**



Here are the essentials of P-K Self-tapping Screw selection and use, condensed into a 24-page, pocket-size reference booklet. This new edition is redesigned and improved to give you all the information you need, and help you find it faster.

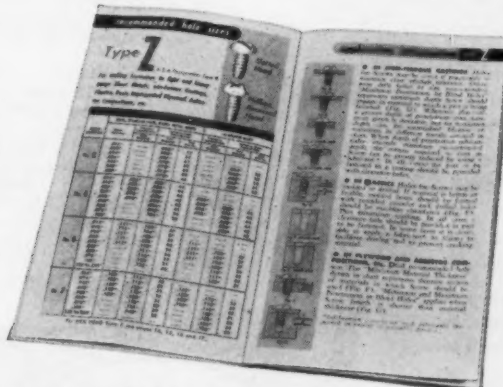
It's ready just in time to help you with your

current task of training a large number of new assembly workers. And for veterans, too, it will help avoid mistakes that cause spoilage and slow up production.

Get the copies you need from your P-K Distributor—ask for Form No. 480. Or write Parker-Kalon Corp., 200 Varick St., New York 14.



Tells WHERE to use WHAT P-K Self-tapping Screw in Metals or Plastic



Gives Hole Sizes and Application Data for all types of P-K Screws

*The Original*  
**PARKER-KALON® SELF-TAPPING SCREWS**

A TYPE AND SIZE FOR EVERY METAL AND PLASTIC ASSEMBLY



**BACKED BY YEARS OF RESEARCH,  
PRODUCTION AND PERFORMANCE...**

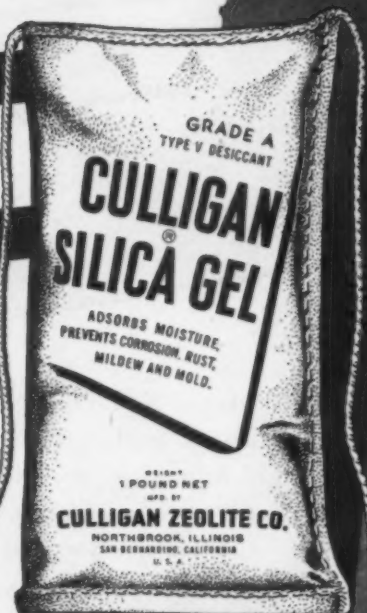
# CULLIGAN<sup>®</sup> SILICA GEL

the ideal desiccant  
for method II  
dehydrated packaging

Millions of bags of Culligan Silica Gel have been delivered for a multitude of Method II packaging applications. Your assurance of Culligan service, quality and reliability is attested in the fact that over 2,000 leading organizations have consistently specified Culligan Silica Gel. Carloads of this Culligan grade A desiccant have been produced on prime contract directly with the Military Services.

- Culligan Silica Gel meets current military specifications. Prices are competitive.
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- National field-staff service of expert Culligan packaging engineers.
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and specification sheet



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Culligan Silica Gel is a highly adsorptive granular form of pure silica, consisting of hard, glassy, rounded particles . . . ranging from 6 to 80 mesh in particle size. Interspersed with minute capillaries, it is estimated that one cubic inch of Silica Gel contains an acre of surface available for adsorption! Culligan Silica Gel will adsorb up to 40% of its own weight of moisture, and is non-dilutescent.

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DESICCANTS**

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### TWO NEW ADHESIVES ANNOUNCED BY PLASKON DIVISION

Announcement of two new adhesives was recently made by the Plaskon Divn., Libbey-Owens-Ford Glass Co., Toledo 6, Ohio. A modified urea resin sold in liquid form has been designated 530-11L and is expected to find important use as a wood adhesive, abrasive binder, paper-board resin, and in other industrial applications. The glue cures very rapidly when used in continuous lumber core bonding operations due to exothermic reaction inherent in the glue. The glue is also suitable for cold press assembly gluing where heavy glue lines are unavoidable.

The second new glue product announced is a phenolic resin for hot press plywood gluing that produces glue lines passing Army-Navy Aeronautical Specification AN-A-45. It has been developed to permit manufacturers in the woodworking field undertake government mobilization work with a glue meeting the military requirements. Designated 815-12, the resin is sold as a fine powdered material, red to brownish in color, and joins the urea formaldehyde and other phenol formaldehyde glues and adhesives that make up the company's line of glues and industrial resins.

### RECOMMENDED MINIMUM RADII FOR BENDING ALUMINUM SHEET

A 11 x 17 chart, suitable for posting, giving the recommended minimum radii for the proper bending of aluminum sheet in various gauges of the most commonly used alloys has been published by Kaiser Aluminum. It may be obtained by writing Kaiser Aluminum & Chemical Sales, Inc., 1924 Broadway, Oakland 12, Calif.—or from any of the company's sales offices.

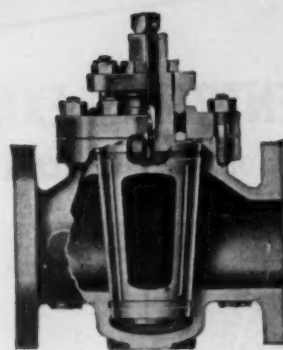
### PACKAGE CUSHIONING BOOKLET

"Package Cushioning" is the title of booklet just released by the Sponge Rubber Products Co., Shelton, Conn., designed as a guide to the selection of the proper cushioning material for packaging problems. It tells about the packaging or cushioning values of the company's materials for products that are sensitive to the shocks and vibrations of rough handling and those sufficiently valuable in terms of cost or end use. These cushioning materials include rubberized hair and/or wool (Texlite); latex foam rubber (Texfoam); sponge rubber (Spongex); unicellular rubber (Spongex Cell-Tite); bonded shredded latex foam or sponge rubber (Spongex) and unicellular plastic (Spongex Plastic No. 1). In addition to an impartial exposition of cushioning materials treating such factors as compression, damping, density, dusting, corrosiveness, temperature, etc., the booklet contains a table of properties of the cushioning materials made by the company, and summary of sponge rubber products—their form and uses.

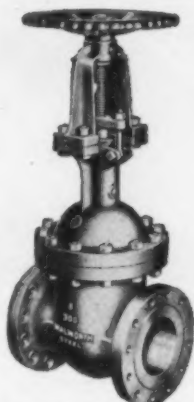
(Please turn to page 274)

# ● VALVES

# ● PIPE FITTINGS



Walworth  
Lubricated Plug Valve



Walworth  
Steel Gate Valve



Walworth  
Iron Body Gate Valve



Walworth  
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Walworth  
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Walworth manufactures a *complete line* of valves and pipe fittings: all made to the highest standards of quality, both as to dimensional accuracy and metallurgical properties. In design, construction, and performance, Walworth products reflect more than a century of experience in the manufacture of quality valves and fittings.

Your Walworth distributor will give you full information on the *complete line* of Walworth steel, iron, and bronze, and special alloy valves and pipe fittings; also Walworth Lubricated Plug Valves, and Walseal\* valves, fittings and flanges. Ask for this information today.

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JULY, 1951

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273

## ENTRANCE EXAM to shipping department for Perkins custom-made Gears



Checking tooth form.

• This is one of the many tests which Perkins Gears must pass prior to their admission into our shipping department.

• The variety and accuracy of the equipment used in our inspection department, plus the severity of the tests themselves, keep the number of gears returned to us by customers as "rejects" correspondingly low. The rigor of our inspection methods is, to us at Perkins, just a matter of plain ordinary horse-sense — a commodity which is plentiful in New England. We thus reject it as a virtue to be proclaimed from the housetops, and offer it to our customers as a normal part of our services: The production of precision, custom-made gears.

**PERKINS MAKES TO CUSTOMERS' SPECIFICATIONS:**  
Helical Gears • Bevel Gears • Ratchets • Worm  
Gears • Spiral Gears • Spur Gears with shaved  
or ground teeth • Ground Thread Worms  
IN ALL MATERIALS, METALLIC & NON-METALLIC

**PERKINS MACHINE & GEAR co.**  
WEST SPRINGFIELD, Massachusetts

## STEEL DISCOVERY TO BOOST STRATEGIC MATERIAL YIELD

A discovery by The Carpenter Steel Co., Reading, Pa., involving the application of a rare-earth element, transforms certain "difficult-to-work" high-alloy, corrosion resistant and heat resistant steels into products that can be readily hot worked. Previously use of these strategic steels had been considered impractical because of limited hot workability.

The steels can now be produced in bar, rod, sheet and tube forms so important to the defense effort. The discovery is being made available to all steel producers through licensing agreements.



Practical effects of cerium are seen in this coil of hot rolled Carpenter Stainless Strip (Type 316). Note absence of edge checking. Heretofore, it was virtually impossible to consistently obtain clean, smooth edges in this alloy.

Core of the development is the application of cerium, an element heretofore used extensively in flints to produce sparks in cigarette lighters. Cerium, by itself or in combination with its sister element, lanthanum, both found in misch metal, has enabled Carpenter metallurgists to overcome a "hot working" problem which has plagued the industry for years. According to metallurgists, the discovery should enable the steel industry to produce greater quantities of hot workable alloys for many applications such as heat resistant baffles and shields, heat resistant parts for jet and turbo-jet aircraft, heat and corrosion resistant valves for internal combustion engines.

### See Increased Mill Yields

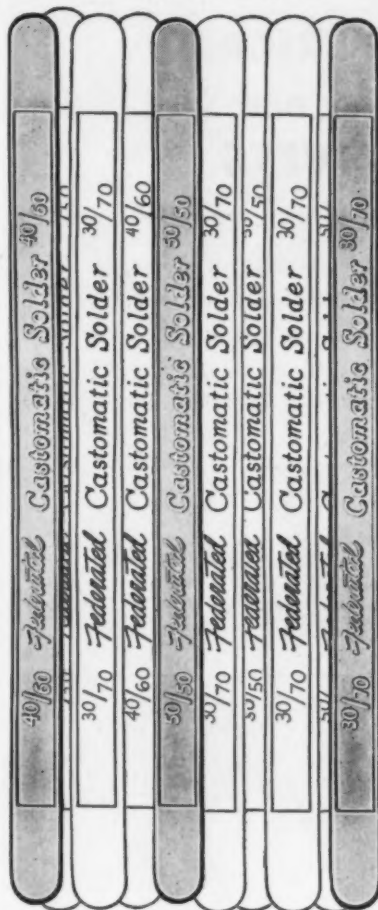
For many steel producers, the Carpenter invention shows possibilities of increasing mill yields from ingot to hot rolled bars, plates, tubes and forgings of corrosion and heat resistant steels. This is true because the new range of cerium-bearing alloys promotes greater hot ductility, and reduces rejects. Forgers get the benefits of better hot working, fewer cracks and tears, as well as better finishes required less machine clean-up. Fabricators should ultimately find a greater supply of strategic steels because of higher mill yields.

Another far-reaching aspect of the invention is that the new cerium-bearing alloys, because of their higher yield and easier hot workability, show a definite

(Please turn to page 276)

## CASTOMATIC BAR SOLDERS

... revolutionary new oxide-free solders that are cast on patented machines. All are absolutely uniform in composition and weight. All bars of a given composition melt at the same temperature. Available in all standard analyses.



## CORE SOLDERS

... may be had with either a pure rosin flux or a quick-acting acid flux. Available in a variety of alloys and special compositions. Listed by Underwriters' Laboratories, Inc.



## SOLID WIRE SOLDERS

... free-flowing solders that are ideal for general purpose work. Standard alloys from stock ... others on request.



*Federated first for*  
**ALL SOLDERS**

Federated Solders are consistently uniform alloys of tin and lead ... prepared by experienced craftsmen under strict metallurgical control ... from the best materials available.

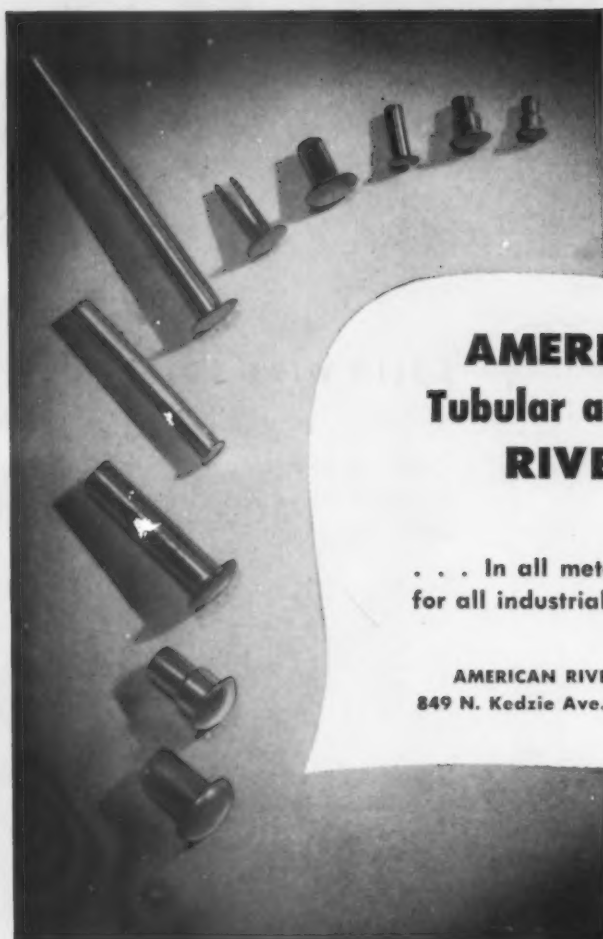
Federated also makes all commercial pig, drop, foil, ingot, triangle, strip, wiping and segment solders.

To order or for further information, call or write one of Federated's 22 sales offices across the country. There is one near you.

*Federated Metals Division*



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## AMERICAN Tubular and Split RIVETS

. . . In all metals, all styles,  
for all industrial applications.

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- DURABLE—strong steel frame, reinforced
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- COMFORTABLE—extra-wide, extra-deep seats and backs
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- RUBBER SHOES—long-life, replaceable
- SEAT STYLES—formed plywood with durable lacquer finish; or vinyl-plastic upholstered

OVER EIGHT MILLION IN USE!

WRITE FOR  
DESCRIPTIONS  
AND PRICES

*American Seating Company*

Grand Rapids 2, Michigan

Branch Offices and Distributors in Principal Cities

(Continued from page 274)

promise of conserving other strategic alloys.

Those Carpenter corrosion and heat resistant grades included in the new cerium-bearing alloy range, and patented as such include Stainless AISI Types 309, 310, 316, 317, 330, as well as Carpenter Stainless 20, and Carpenter austenitic valve steels. The invention applies not only to ferrous alloys containing more than 50% iron, but also to non-ferrous alloys containing little or no iron.

### FAIR TRADE CONTROVERSY STILL RAGES

Legal experts violently disagree as to whether and when noncontracting retailers have to observe fair trade prices, says Commerce Clearing House in a late report.

The heated controversy hinges on court decisions and rulings yet to be issued which will determine the controlling factors placing fair traded products either in interstate or intrastate commerce.

While the Supreme Court decision in the Schwegmann case held that a non-contracting retailer is not bound by fair trade prices when interstate commerce is affected, the way is still open under other circumstances to force compliance.

In every instance, the question is whether interstate commerce is affected. For example, can an intrastate distributor force an intrastate retailer to observe fair trade prices on products made out of the state?

Just two weeks after the fair trade decision, the Supreme Court neatly tossed one issue back to the Court of Appeals "for reconsideration in the light of the Schwegmann decision." In this latter case, the Appeals Court had held that a fair trade injunction against a noncontracting retailer should be limited to intrastate transactions of the retailer. Now the Appeals Court will probably examine the effect of the manufacturer's business on interstate commerce.

The "interstate-intrastate" dividing line between permissible and prohibited resale price activity will undoubtedly be more clearly defined by new judicial interpretations. Highly probable, also, will be new attempts to amend the Sherman Antitrust Law and renewed activity under state sales-below-cost acts.

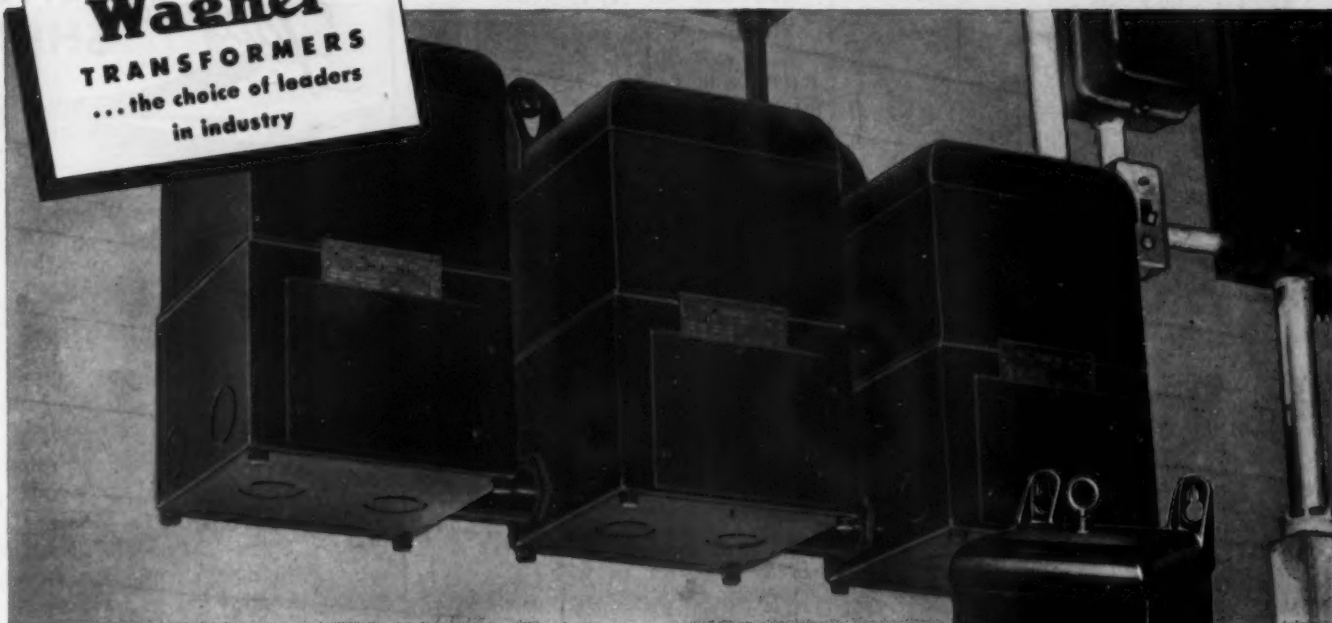
Commerce Clearing House says it may take many months to get clear-cut decisions covering all possible situations in the 45 states where existing fair trade agreements are still lawful. Only Missouri, Texas, and Vermont are unaffected, as they have no fair trade laws.

### MODERN LABEL PRODUCTION

Kalamazoo Label Company, 315 W. Ransom St., Kalamazoo, Mich., has issued a booklet outlining the advantages of purchasing all types of paper labels directly from the manufacturer. How labels are produced in Kalamazoo's modern air-conditioned plant and the special services offered are described.

(Please turn to page 278)

**Wagner**  
TRANSFORMERS  
... the choice of leaders  
in industry



## Reduce Power Distribution Costs (Save copper too!) with Wagner Dry-Type Transformers

You can save money, save copper, and improve voltage regulation by bringing the *right* voltage to the load center with Wagner Dry-Type Transformers. They are safe to use—without fireproof vaults or other special protection—even where fire hazards are present. They provide steady voltage with minimum line losses. They are compact and light in weight—economical to install and easy to move when changes in plant facilities are necessary.

Wagner Dry-Type Transformers are available in single-phase, two coil units (Type AE) in sizes 1.0 to 200 kva and in three-phase, two coil units (Type AP) in sizes 3.0 to 300 kva. Both types 600 volts and below.

These dry-type transformers can be used in many lighting and power applications. Bulletin TU-90 gives many suggestions that you can use—write for your copy or consult the nearest of Wagner's thirty-one branch offices for expert advice on your transformer problems.



TYPE AE



TYPE AP

**WAGNER ELECTRIC CORPORATION**  
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ELECTRIC MOTORS • TRANSFORMERS • INDUSTRIAL BRAKES  
AUTOMOTIVE BRAKE SYSTEMS — AIR AND HYDRAULIC

**BRANCHES IN 31 PRINCIPAL CITIES**



TU-10



● **3 TIMES THE CUTTER LIFE** machining pinions on Gleason Revacycles and grinding reduced from .020" to .009" average after switching to Stuart's SpeedKut B. Cutters cost about \$350 per set.

● **2½ TIMES THE PUNCH LIFE.** Using Stuart's SuperKool Base 1500 pieces were produced before changing punches, where only 600 were produced before on a large press punching ½" steel.

● **8 TIMES THE WHEEL LIFE.** Wheels used for grinding valve stems lasted only one week; since changing to Stuart's 81X Grinding Oil now last 8 weeks.

THE cutting fluids you purchase have an important influence on the consumption of perishable cutting tools in your plant—cutting tools that are costly and becoming harder to get. The Stuart salesman in your territory can help your plant *conserve cutting tools*. He asks nothing but an opportunity to prove this to you. Ask him to call.

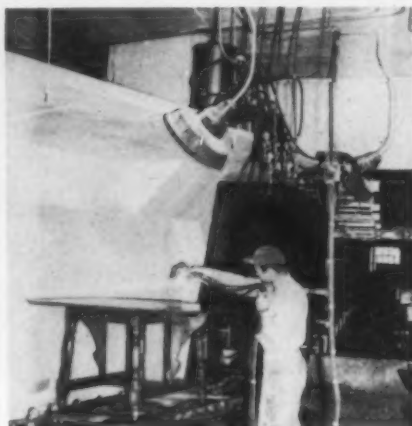
STUART service goes  
with every barrel



2727-31 South Troy Street, Chicago 23, Ill.

## HOT LACQUER PROCESS SAVES ALL ALONG THE LINE

The new hot-lacquer process is enabling the Angelus Furniture Manufacturing Company of Los Angeles to save all along the line in finishing materials, thinners, and operating overhead; and getting fewer rejects and better finishes, according to Mr. Henry H. Griening, supervisor of finishing operations for Angelus.



"One coat equals one and one-half or even two coats of ordinary lacquer."

Comparing hot lacquer with the regular cold lacquers which Angelus used for many years, and with low-bake synthetic finishes which were also tested, Mr. Griening says, "The most important reason why we go for hot lacquer here is that one coat equals one and one-half or even two coats of ordinary lacquer. The high solids in hot lacquer do not penetrate as far into the wood as does cold lacquer during the cooling out process. Consequently, hot-lacquer films have an extra 'build' on the surface. This gives us a better sheen, cuts down the cost of rubbing in some cases as much as 50%. Hot lacquer lays on nicely with much less overspray, and much better coverage. Hot lacquer retains all the advantages of easy 'touch-up' characteristic of cold lacquer and introduces no repair difficulties."

## CONSUMERS URGED TO BUY AND STORE COAL DURING SUMMER

The National Coal Association is urging coal users to buy and store, now and during the summer, the coal they will need next winter. The NCA points out that transportation facilities are plentiful now, the mines are in a position to see that coal is prepared in the best possible manner, and careful handling can be given to deliveries.

Transportation facilities are normally strained during the winter and subject to the hazards of storms which may paralyze them. And this year, the Coal Association points out, no one knows what is ahead. There was a transportation shortage last winter, and this fall the defense program is expected to mean far greater demands on the railroads systems, as well as on supplies of goods.

(Please turn to page 280)



## VERSATILE

A general purpose cutter easily mounted and moved.

## FASTER PRODUCTION

Designed for in-line production with balanced cutting action.

## FEATURES

Sizes — 24" to 120". Foot pedal holding clamp. Easy blade change for sharpening.

Write today for new folder showing Production Tables.



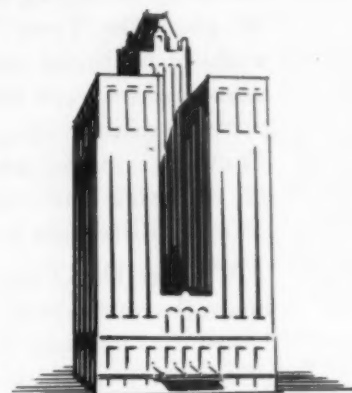
## HOBBS

MANUFACTURING CO.

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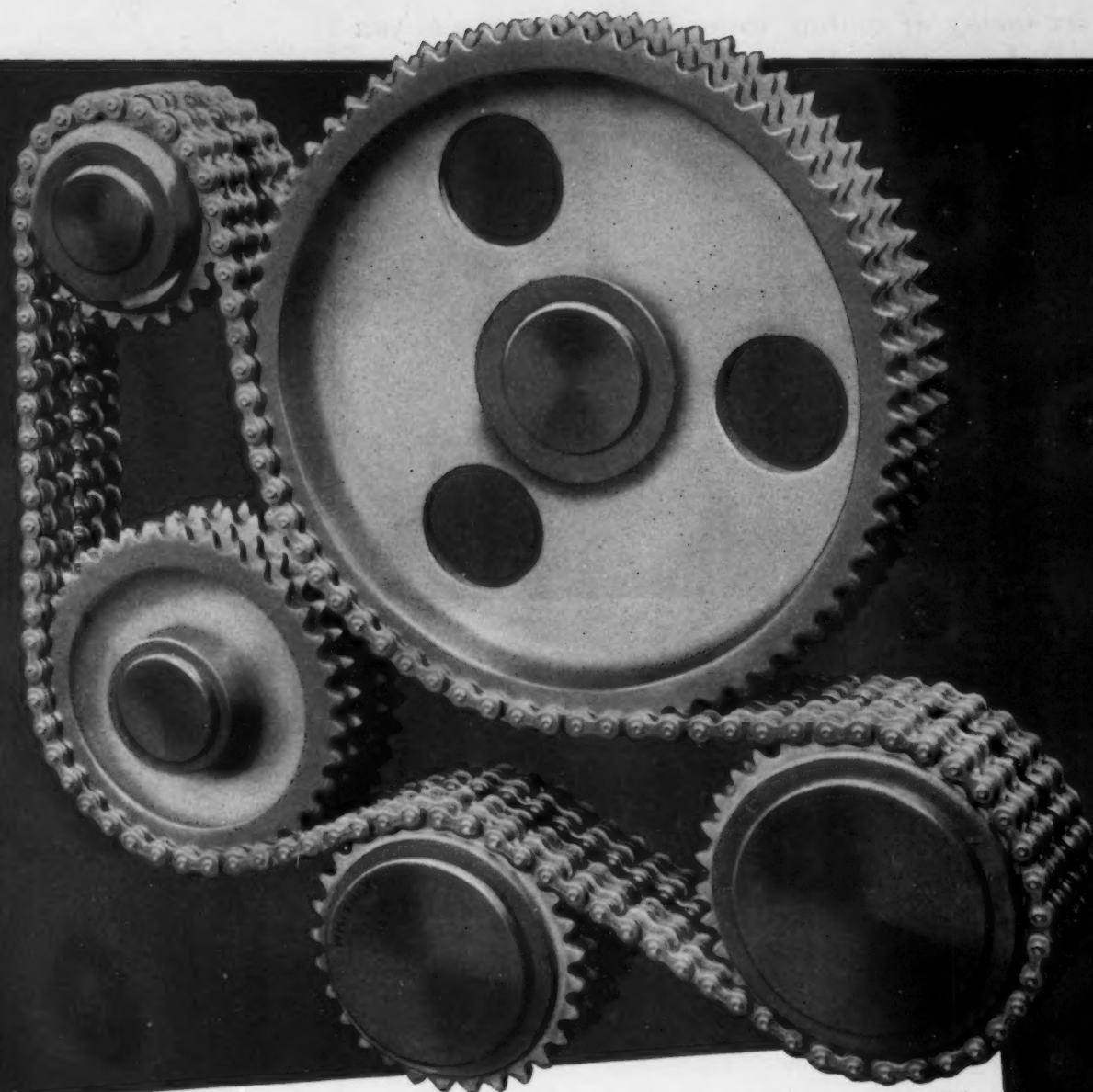
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JACQUES hand and power shears, TRI-POWER Die Presses, Slitters and Rewinders, HOBLOK and LOXIT Cotter Pins, TANGLEPROOF Lock Washers.



Faultless service, 700 inviting, clean rooms, superb Chesapeake Bay sea food, a welcome that lasts . . . and genuine, old-fashioned hospitality . . . all contribute to making the largest hotel in Baltimore the finest address in Maryland.

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**LORD BALTIMORE**  
Hotel



## THE RIGHT SETTING for a Whitney Chain Drive

### **Whitney Chain Drives Simplify Designs Cut Costs of Complex Drive Mechanisms Deliver Full Rated Horsepower**

Shown above is a 5-point complex drive solved by Whitney roller chains. It clearly illustrates how the versatility of *Whitney Chain Drives* will help you meet your design requirements efficiently and economically.

Now take a look at the drive . . . see how the Whitney Chain is deeply seated in the sprocket teeth, assuring *positive grip*. Note that there can be *no slip* which means

you get *full rated horsepower* from driver to driven mechanisms. This means machine output is maintained, highest transmission efficiency is always obtained . . . a vital factor in maintaining high production and product uniformity.

In addition, Whitney Chain Drives absorb shock loads without breakage. Their rugged construction assures long operating life with minimum maintenance. They save you time and money because they are easy to install, easy to remove without disconnecting shafts or bearings.

If your power transmission problems involve long or short centers, reversal of

direction, timing motions, fractional or hundreds of horsepower, the unusual adaptability of Whitney Chain Drives will help you meet your design requirements efficiently and economically.

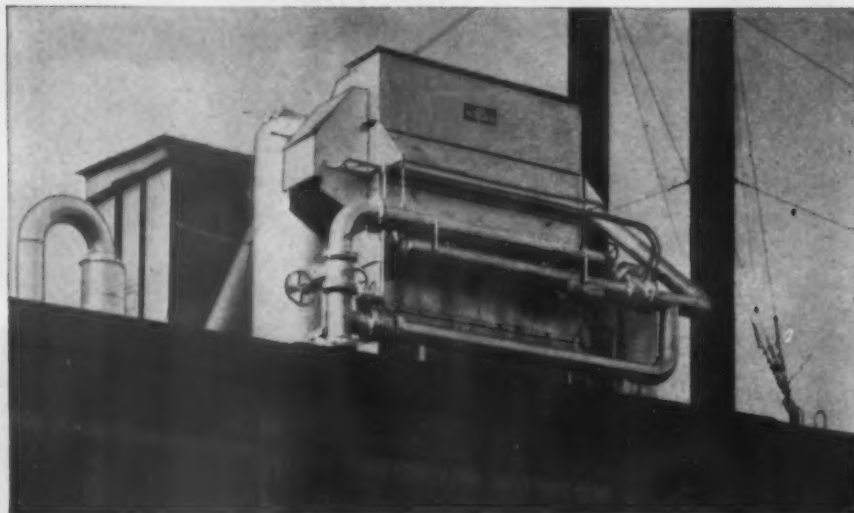
From the complete line of Roller, Silent and Conveyor Chain Drives, Whitney engineers can recommend, without bias, the proper type of drive for each application . . . the chain drive which will give you the best service at lowest cost.

Consult your local Whitney Field Office or Distributor, or write direct to us for complete information and catalog.

## **Whitney Chain Company**

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**Direct saving of cooling water expense returns to you  
the cost of a Niagara Aero After Cooler  
in less than two years.**



## How to Get Drier Compressed Air:

*It prevents many troubles and saves  
much expense*

● NIAGARA AERO AFTER COOLER cools compressed air or gas below the temperature of the surrounding atmosphere. Therefore you get no further condensation in your lines. You save much in repairs to pneumatic tools and equipment; you save much interruption to production; you save water damage in paint spraying, in air cleaning, in any process where compressed air comes in contact with your materials or parts in manufacturing (sand blasting, for example).

Niagara Aero After Cooler uses evaporative cooling, saving 95% of your cooling water con-

sumption. This saving quickly returns the cost of the equipment to the owner or makes extra cooling water available for other processes.

The Niagara Aero After Cooler produces compressed air with 30% to 50% less moisture than by ordinary cooling methods. Other Niagara equipment provides bone-dry air for processes requiring it.

If you have an air problem or a cooling problem, a Niagara engineer probably has an answer that will improve your process or save you operating or maintenance expense.

*Write for Bulletin 98*

## NIAGARA BLOWER COMPANY

Over 35 Years Service in Industrial Air Engineering

Dept. 9U, 405 Lexington Ave.

New York 17, N. Y.

*Experienced District Engineers in all Principal Cities*

(Continued from page 278)

As government fuels authorities have pointed out, coal is one commodity where hoarding is wise and patriotic. Coal is the one plentifully abundant fuel, and summer storage tends to increase the total amount available. The coal industry's output is closely geared to the speed with which the nation's transport system moves the coal away from the mines. For, coal usually cannot be stored at the mine mouth.

So, coal purchased and stored now enables the railroads to handle a greater total volume and helps take fuller advantage of the capacities of a progressive, productive industry for keeping the nation well-supplied with coal.

### POLYETHYLENE-LINED DRUMS OFFER SHIPPING ECONOMY



Steel drums, pails and hackney-type drums coated with Bakelite polyethylene are said to offer a cheaper method for shipping materials ranging from edible foods to corrosive acids and alkalis. Substances formerly shipped in more expensive containers made of special metals or other materials can be transported in the coated drums or pails at a fraction of the cost, it is claimed.

The interior coating resists moisture and most chemicals at all ordinary temperatures. The continuous coating adheres strongly to the steel container and maintains the adhesion continuity under rough shipping conditions. The lining, through the application method, has eliminated the chime of the container, so packaged products come in contact only with the relatively inert Bakelite polyethylene, never the metal. Washing out reconitions the coated containers for further use.

The containers are available in 5 gal. and 55 gal. sizes from Delaware Barrel Co., Inc., P.O. Box 1648, Wilmington, Del.

### NEW CHEMICAL BATH FOR REMOVING SCALE FROM FORGINGS

One of the most difficult problems in production heat treating of steel forgings is the removal of furnace scale. Now the Pennsylvania Salt Manufacturing Company, Philadelphia, Pa., is marketing a pre-heat chemical bath which completely removes this scale during quenching and has accounted for cost savings of 90 percent over previous methods used in industrial production.

The bath is made up of a new product, Pennsalt SR-4, dissolved in weak muriatic acid and water. The product was

(Please turn to page 282)

# *Job maker for the millions*



**IT'S COAL...** black nuggets of light, heat and power... raw material for more than 200,000 different products... job maker for workers throughout industry. And it's pouring out of our mines at a rate close to 30,000 carloads every working day. This immense production is made possible by modern mechanization, which includes thousands of mine locomotives and shuttle cars powered by Exide Batteries.

*Where dependability is vital, you'll*

*find Exide Batteries. They supply motive power not only for mine haulage units, but also for time-saving, cost-cutting battery electric industrial trucks.*

## **Exide BATTERIES**

"Exide" Reg. Trade-mark U. S. Pat. Off.

Exide Batteries provide power for railway car lighting, air-conditioning, diesel locomotive cranking, signal systems. Vast numbers are used by telephone, telegraph, radio, television, light and power companies. They perform many vital services in airplanes and ocean vessels... provide battery power for fire alarm circuits and emergency lighting systems. And on millions of cars, trucks, tractors and buses they prove daily that "When it's an Exide, you start."

1888... DEPENDABLE BATTERIES FOR 63 YEARS... 1951

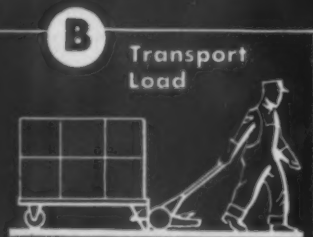
**THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 2 • Exide Batteries of Canada, Limited, Toronto**

JULY, 1951

*Please mention PURCHASING Magazine when writing to advertisers.*

281

# Cut Handling Costs with the **Colson** LIFT-JACK System - it's as simple as ABC



● Through production, in and out of storage, on and off freight cars or trucks, one Colson Lift-Jack, with wood or steel semi-live skids, does the work of many conventional hand trucks, saves time and money.

Other cost-cutting materials-handling equipment by Colson includes drum and barrel trucks, platform trucks, hand trucks and precision-built wheels and casters. Our engineers are glad to help you select the right equipment to meet your needs—exactly.

THE COLSON CORPORATION  
ELYRIA, OHIO

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Position.....  
Company.....  
Address.....  
City.....Zone.....State.....

**THE COLSON CORPORATION**  
ELYRIA, OHIO

(Continued from page 280)

developed from a practice originated at the Toledo, Ohio, and Pottstown, Pa., plants of the Spicer Manufacturing Division of the Dana Corp. Pennsalt and Spicer researchers cooperated in the development and in laboratory and plant tests. The new product has been adopted by Spicer in several of its production operations.

The Pennsalt SR-4 bath requires no heating and is made up in ordinary rubber lined tanks. Dipping baskets can be made of simple sheet iron. Parts covered with forging scale are immersed in the bath for five minutes and then may be placed directly into heat treating furnaces or can be stored for later heat treating.

The forgings are heat treated at a temperature range from 1500° to 1600°F. and soaked at temperature for the minimum time consistent with good metallurgical practice. An additional saving results from the fact that the forgings can be heat treated in a non-reducing atmosphere or without a prepared atmosphere.

Use of SR-4 in the Spicer operations resulted in a 90 percent reduction in descaling costs and in the elimination of costly shot-blasting equipment and resulting delays due to down-time for maintenance of this equipment.

Satisfactory results have been obtained in SR-4 descaling of plain carbon steel grades and some SAE alloy steels. The product is currently undergoing field tests in several other industrial plants in order to determine its effectiveness on remaining alloy compositions.

A New Product Bulletin describing Pennsalt SR-4, its properties and method of use is available upon request. Write to: Pennsalt Chemicals, Market Research Division, 1000 Widener Building, Philadelphia 7, Pa.

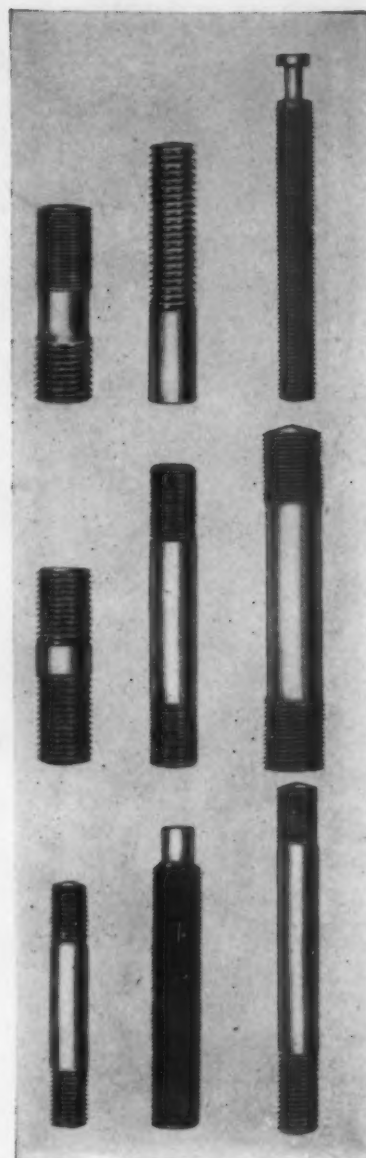
## PREFINISHED WALL PANELS COMMERCIAL STANDARD

Commercial Standard 176-51, Prefinished Wall Panels, providing minimum specifications for one grade of prefinished wall panels, published by the U. S. Department of Commerce, is available from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. at 5¢ per copy.

## BOOKLET ON "ASSEMBLY SUGGESTIONS" By SHAKEPROOF INC.

To help industry in meeting urgent defense production needs, Shakeproof Inc., a division of Illinois Tool Works, Chicago, offers a new 24-page booklet entitled "Assembly Suggestions." Specially prepared to assist designers and product engineers in the selection of fastenings best suited for specific requirements, the booklet contains details and illustrations of the newest fastening developments.

(Please turn to page 284)



## WHEN IT'S Special BOLTS and STUDS

Send your Specifications to

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37 years' experience in  
making special bolts, studs,  
nuts for specific job  
requirements.

(Send your blueprints to

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REPRESENTATION IN PRINCIPAL CITIES



## *She's going to drink an atomic cocktail!*

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Tomorrow, doctors will survey her with atomic instruments—and be able to tell if she has thyroid trouble!

Radioactive elements (called isotopes) are proving to be the greatest detectives in medicine. These "hot" atoms detect

thyroid trouble, cancer, tumors, even leukemia!

Hospitals all over the country are calling for isotopes. But the "hot" atoms don't stay hot for long. They must be delivered at top speed to be effective!

That's why, when shipping isotopes, drugs, and important chemicals, hospitals always prescribe the fastest possible method. They ask for Air Express!

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**GETS THERE FIRST**

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...and the skill to use it wisely!



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JACKSON AND CHURCH  
COMPANY  
SAGINAW, MICHIGAN

A new heavyweight in the Watertown production line that means... larger integral moldings, faster molding cycles, lower costs, flexibility of application and top volume output.

This new 64 oz. injection press is another in a long line of very good reasons for calling on Watertown when you're faced with the problem of selecting the right custom molder for that big, important job.

Take advantage of this more than efficient mating of trained, capable minds and a smooth functioning, versatile machine... a combination with the proven ability to deliver any type of large, one-piece housing, cabinet or panel requiring thermoplastic materials. Molding your part in one piece might well be the answer to the high cost of sub-assembly procedures.

At Watertown you'll always find the perfect production situation... constantly improving and expanding plant facilities, skillfully applied under experienced supervision.

If you have a particular part or product in mind, call on Watertown for the engineering facts and cost data. If your specifications are complete, drop a copy in the mail today for price quotation and delivery information. . . . No obligation, naturally.

**WATERTOWN**  
MANUFACTURING COMPANY  
200 ECHO LAKE ROAD  
WATERTOWN, CONNECTICUT

SINCE 1915

(Continued from page 270)

quer. The spots are classified in three main groups depending upon the gloss of the surface finish: These are glossy colors, semi-glossy colors, and lusterless (or flat) colors. Each group is further classified according to the hue name, presented in the order brown, red, orange, yellow, green, blue, gray, and miscellaneous (including black and white). For a particular color group, the colors are arranged, when possible, in the order of dark to light. The spots were reproduced by the McCorquodale color process, in which all spots of lacquer are simultaneously deposited directly on the loose leaf sheets making up the specification.

#### Colorimetric Analysis and Permanence Study

Most material working standards for color are specified on a fundamental basis, using the present-day methods for the engineering description and specification of color. For this reason a spectrophotometric and colorimetric analysis of a master set of these paint color spots is being made by the Photometry and Colorimetry Section of the National Bureau of Standards. The paint spots thus expressed in the fundamental terms of the I.C.I. standard observer and coordinate system may be correlated with material working standards in systems of color, collections of color samples, or specifications for color. This fundamental analysis will also serve as a guard against "color drift" in any reissue of the paint spots.

#### Munsell System of Color Comparison

In addition to the fundamental colorimetric specification of a collection of color samples, it is often convenient to have available the more popular, but usually less exact, specification of samples in terms of the Munsell System of Color. The Bureau will therefore define a master set of color spots in terms of the Munsell System of Color both by the method of visual comparison and by the method of spectrophotometric analysis. The "ISCC-NBS (Inter-Society Color Council—National Bureau of Standards) system" for naming the color can then be utilized.

#### Basis for New Specifications

The color tolerance used in developing the new specification was based on the NBS Unit of Color Difference defined by equation 13 of NBS Circular C429, (Photo-electric tristimulus Colorimetry with Three Filters, by Richard S. Hunter, July 30, 1942). The NBS unit of color difference is intended to be so small that color differences of less than one unit will be perceptually unimportant in most commercial transactions. This value is about three or four times the smallest color difference perceptible with certainty under the best conditions of observation by a trained inspector.

Federal Specification, No. TT-C-595, "Colors; (for) Ready-Mixed Paints". For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., Price \$4.50.

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STANDARD TOOLS AND BLANKS



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need tools fast.

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Need cutting tools in a hurry? Just name the standard styles and carbide grades desired ... get prompt shipment from a big stock near you.

Our line of carbide "standards" is complete. It covers 90% of all single-point operations. CARMET standard tools come ready to use ... easy to modify for special purposes, by grinding. Style C, illustrated, is designed particularly for conversion into various shapes for numerous applications.

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W&D 3488

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We've been diagnosing spring problems for 61 years and industry has thrived on our prescriptions. Recommending the right springs for people like yourself is an old habit with American-Fort Pitt engineers. The American-Fort Pitt Springs that you specify will ease and speed assembly of your product and contribute to its good name. Mechanical springs is our specialty—and we produce them in a modern plant, employing advanced metallurgical techniques. When it's spring time, give us a ring.

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**H. K. Porter Company, Inc.**  
 No. 2 John St., McKees Rocks, Pa. (Pittsburgh District)

**AMERICAN-FORT PITT SPRINGS**

## From One P. A. to Another

(Continued from page 74)

United States Supreme Court are of particular interest to purchasing executives, for they interpret the controversial price restrictions created by legislation in the Patman Act and Fair Trade Laws.

In both decisions our highest court has ruled for freedom of competitive pricing and selling. It is difficult to understand how any fair-minded, intellectually honest believer in the American System of free, private, profit, enterprise can quarrel with those decisions.

Calling price-fixing, by manufacturers or distributors, either competition or fair trade, is on a par with the Russian claim that a communist dictatorship is a democracy.

It seems almost incomprehensible that in a free country, this freedom of pricing had to be protected by the Supreme Court, or that any seller could say, as they have on many occasions, that reduction of his price would be illegal. This talk about injury to a competitor is the biggest hoax and hooey since Goebbels sold the German people the theory they were a master race.

Of course, competitors should be injured; when they lose business it jars them into doing something about it, and that is what made our production and distribution methods the envy of the world.

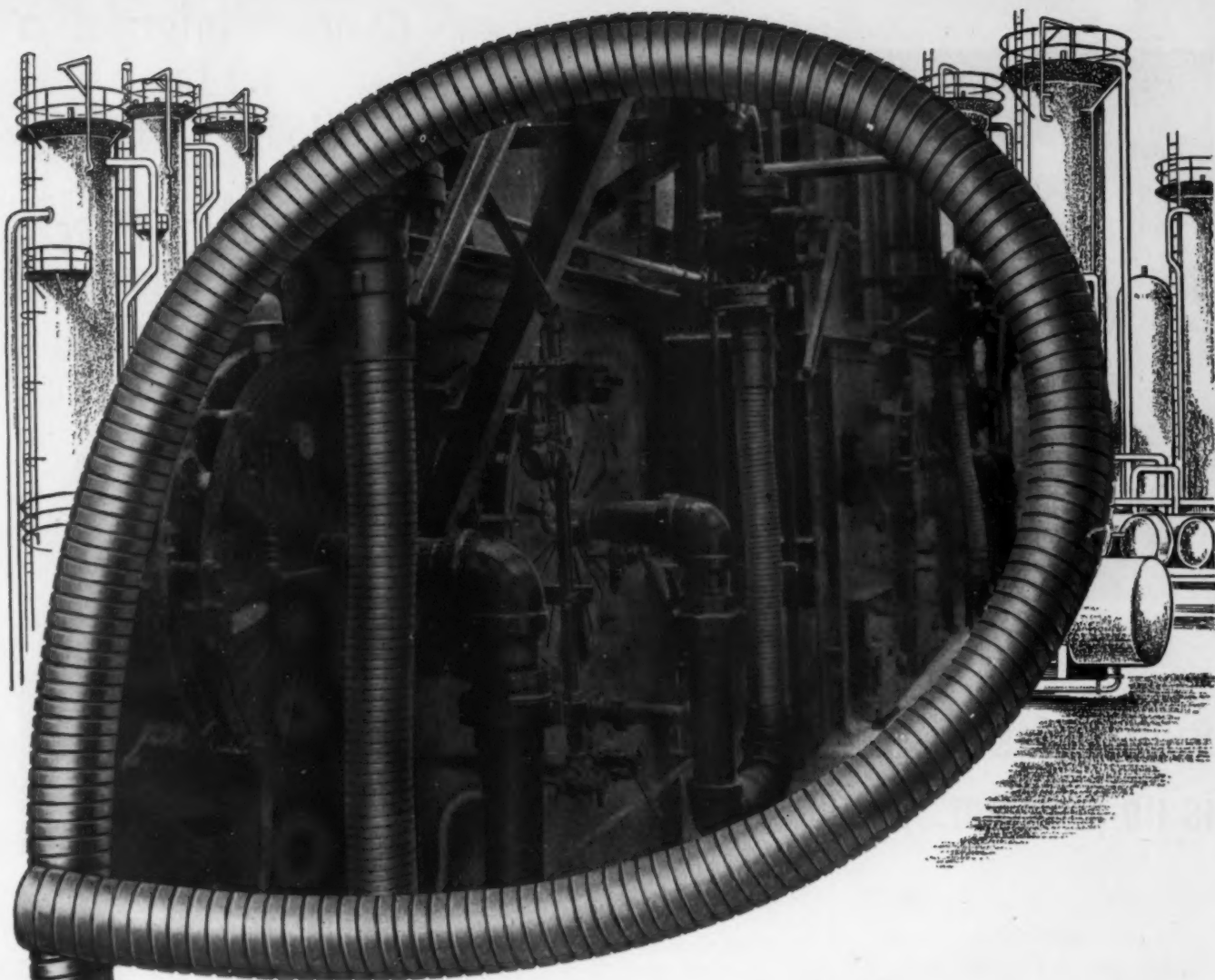
Finally, and From One P.A. to Another, let me give you a challenge that is a responsibility of all businessmen, and particularly the showcase of business which is found in the sales and purchasing departments.

Ethics and morality are difficult angles to discuss, any time or any place. But they must always be our real objectives because they are standards of behavior, developed over the years, as the most suitable for our purpose.

We are told officially that racketeers and gangsters have invaded many lines of business, and we know that transactions and activities which are generally considered ethically improper, are being excused and condoned because they are not illegal. My advice to the younger members is to disregard any temporary advantages that may seem to be offered as a premium for improper transactions, and not to cross the line because there is no cop in sight.

Your own conscience is a better

(Please turn to page 288)



## CORRUGATED "MUSCLES" THAT LET PIPES MOVE

### PENFLEX METAL HOSE ABSORBS THERMAL EXPANSION . . . PREVENTS JOINT LEAKS

Petroleum still burners like this one in Kermit, Texas, put heavy strains on piping. Thermal expansion, contraction and physical shock make safe sealing of burner pipe joint assemblies a vital requirement.

Penflex flexible metal hose with couplings is used on these burners to absorb any pipe movement due to extreme temperature and pressure changes. Lengths of 4" I.D. interlocking, four-wall galvanized steel hose are installed

on each burner. Provides outstanding safety and high, uninterrupted flow of volatile fluids. Leak-proof, tough and flexible.

Penflex engineers can help you solve flexible tubing application problems. Penflex manufactures a complete line of four-wall, interlocking and seamless welded corrugated tubing . . . from  $\frac{1}{8}$ " I.D. and up . . . automatic barrel fillers, accessories and fittings. Write for illustrated folder, "Flexineering," containing valuable flexible tubing data for your product application.

Pennsylvania Flexible Metallic Tubing Company, Inc., 7218 Powers Lane, Phila. 42, Pa.  
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## Buying fasteners is no problem...IF

...your supplier has the contact facilities, know-how, production set-up—and a thorough-going interest in your individual order.

Scovill offers you all four. Each order is custom tailored and gets *special* handling. We do not run "bin" stock—our production is of bulk lots only, shipped direct to the user.

**Have you tried Scovill service?**



Montclair, N. J. • Detroit • Wheaton, Ill.  
Los Angeles • Cleveland • San Francisco

## From One P. A. to Another

(Continued from page 286)

guide than the law, for ethics and morals are positive limitations rather than legal restrictions on our conduct.

Anyone who does not have that calibre of conscience will not qualify for purchasing's place on the management team, and management will certainly recognize the defect and find someone who completely fills the requirements ethically, as well as in ability; and may that respect for ethics in business—never grow less.

## Meeting the Problem of Strategic Materials

(Continued from page 96)

tion tolerable, but it will not assure success for any business.

I am persuaded that in this critical period of transition upon which our country now is entering, we shall be wise to call up the utmost possible measure of our resourcefulness and self-reliance and lean as lightly as possible on Washington for solutions to our problems. No bureaucratic machine can solve your problems as well as you can. If each manufacturer will do his best to surmount his own peculiar problems, and if the trade associations will do their best to effect an exchange of information and data bearing upon common problems, industry should be able to meet any requirements that now are in sight.

Every new demand upon the government for help adds to an already unbearable load of red tape and paper work and requires the making of decisions in an area where sound decisions are most difficult to obtain. During the next two years Washington regulations will inevitably bulk largely in our affairs. The first couple of years of transition will be a trying time for us all, but if we can get through them we should be able to take the long-term task in our stride.

The more we can work out our own problems, the greater is the contribution that we make toward maintaining the American way of life—which, after all, is what we are working to secure. The less we can rely upon help from the government, the less aid and comfort we shall give those who would like to put a government bureaucracy permanently in control of our industry. I am sure you will agree with me that it is worth the effort.

## Complete Information for the INDUSTRIAL BUYER



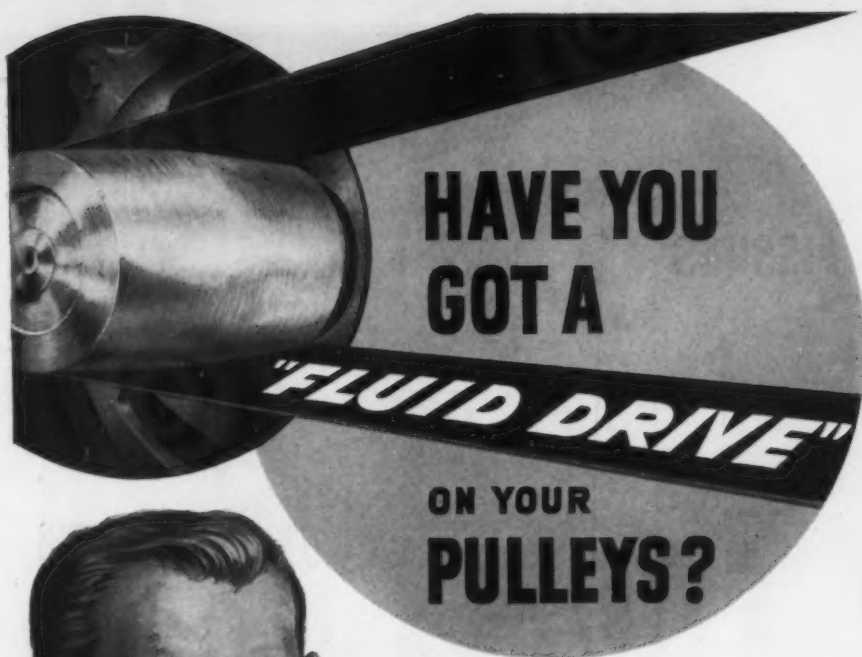
With only the industrial buyer in mind, CONOVER-MAST PURCHASING DIRECTORY carries only listings and product facts on the equipment, parts, supplies, and materials needed by industry. Rigidly excluding all nonindustrial listings and advertisements, the Directory is kept compact—it is easy to keep handy and use, yet it is complete. Besides, it has 35 pages of useful information and tables for the buyer which he will not find in other directories.

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**HAVE YOU  
GOT A**

**"FLUID DRIVE"**

**ON YOUR  
PULLEYS?**



**YES... wherever I've got  
a Graton & Knight  
Engineered Leather Belt!**

Machine and motor manufacturers often depend upon the belt to provide a factor of safety for their equipment. Motors that accelerate quickly to full power, and machines that must handle peak loads, might stall were it not that the belt acts as a "fluid drive," absorbing starting torque and load shock.

To do this successfully the belting must possess "Live Traction." This includes an amazing combination of qualities: strength, resiliency, flexibility, wear-resistance, long life, and a high coefficient of friction. Unless a belt has all of these qualities it will cause wear on motors and bearings, injury to machines with reduced output, and will eventually destroy itself.

Live traction is developed to the highest degree in Graton & Knight *Engineered* Leather Belting. The best leather in the best hides are tanned and processed to develop belting that performs like a fluid drive: pulling your peak loads without slipping — absorbing the shocks of starting and stopping without damage to itself or to your equipment. And these results can be obtained under all sorts of adverse conditions.

Yes—you can drive it better with leather when the belt is engineered for you by Graton & Knight. For this company has specialized in leather belting for 100 years, and has all the answers to your belting problems. May we prove it to you?

**GRATON & KNIGHT COMPANY  
WORCESTER, MASSACHUSETTS**



**YOU CAN DRIVE IT BETTER WITH LEATHER\***



***Engineered*  
LEATHER BELTING**



**I vote YES  
for their packings  
in Leather or  
Synthetic Rubber**

I can count on Graton & Knight and its affiliate, International Packings Corporation of Bristol, New Hampshire for standard and special packings, O-rings and oil seals that meet my specifications every time.



**I also vote YES  
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I can count on Graton & Knight and its affiliate Dixie Leather Corporation of Albany, Georgia for the famous Orange Line to help me reduce down time and improve output.



Automatic serve-up packages

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Let clean, *disposable* KIMWIPES\* industrial wiping tissues standardize—and economize—your cleaning operation. Soft, yet strong, they're ideal for cleaning precision tools and instruments. Recommended for use on finely finished surfaces. And highly absorbent KIMWIPES remove dust, dirt, grease and oil—quickly, safely.

The Bureau of Federal Supply stocks Kimwipes size 15" x 18" in all Supply Centers under stock item #53P23121-800.

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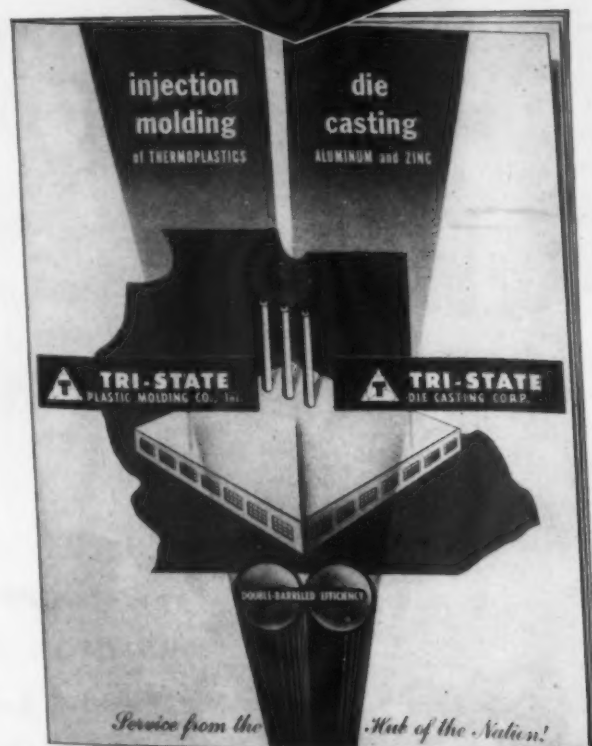
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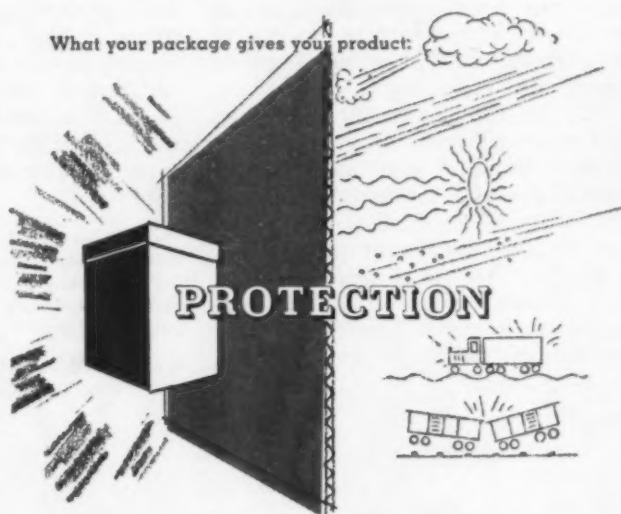
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Your product deserves a better package—for protection

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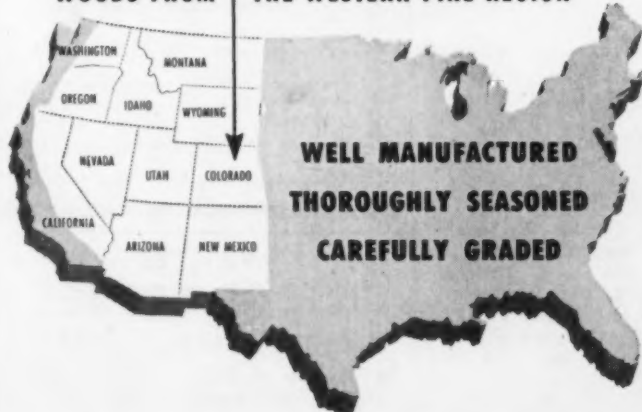
#### THESE ARE THE WESTERN PINES

Idaho White Pine,  
Ponderosa Pine, Sugar Pine

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Larch, Douglas Fir, White  
Fir, Engelmann Spruce,  
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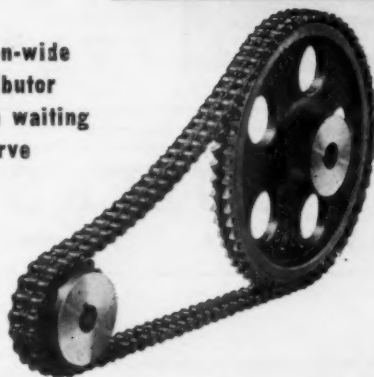
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FROM EACH WORKER!

Save Up to 50%  
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Time

Increase

Man-Hour Output • Combine Work Operations  
**BURR • CLEAN • FINISH • POLISH**  
In One Time-Saving Operation

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1. Bridges the gap between the rough grind and the buff.
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America's Pioneer Manufacturers of Rubber-Bonded Abrasives

Ask your dealer about Brightboy. Write us for Catalog-Manual, and on any problem where abrasive finishing methods or production are involved.

**BRIGHTBOY INDUSTRIAL DIVISION**  
WELDON ROBERTS RUBBER CO.  
NEWARK 7 N. J.

## ABBOTT BALLS

do the job

right

HERE



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THE CALIFORNIA WIRE CLOTH CORPORATION, Oakland, Calif.  
WICKWIRE SPENCER STEEL DIVISION, New York, N.Y.



# LETTERS . . .

## RESPONSIBILITY FOR SHIPPING DAMAGE

In the May issue of your always valuable magazine, L. J. Murphy's article makes it appear as though "you can always return damaged products. . . ." Later in the article the same claim is repeated, although in this second mention it might appear that this is true only when one's packaging specifications have not been followed.

It is our experience that in the majority of cases of damaged deliveries the vendor takes no responsibility and we must take up the matter with the carrier. Should we in the future stick to our guns and return the damaged article to the vendor? We would appreciate some clarification of this.

In the same issue, our eye was caught by the "Beer for Buddies" project. Is there such an arrangement for the Army and, if so, to whom does one send contributions? Like every other veteran, I have been dismayed by the efforts of those who would deny alcoholic beverages to soldiers and would like to do what I can to counteract them.

Fenton Keyes, Bus. Mgr.  
Skidmore College  
Saratoga Springs, N. Y.

● The first statement is misleading in that there is an implication that the shipper is responsible for damage incurred up to the point of delivery, but this is not the fact. The suggestion is that the buyer's recourse is to return damaged goods for replacement or adjustment, but the terms of that adjustment would depend on circumstances. If the shipper fails to observe buyer's packaging instructions which were made a part of the order, he could be held responsible. If the buyer fails to specify packaging methods, the shipper would be responsible only if it could be proved that he failed to use *reasonable care* in packing the shipment. In cases where goods are sold f.o.b. the buyer's place of business, the supplier is required to deliver them in good condition, and if damage is incurred in transit, for which the carrier is liable, the shipper would have to enter claim against the carrier. The buyer, however, still has a responsibility for prompt inspection of a damaged shipment in order to give effectiveness to such an action and to protect his own position.

Sorry, we don't know of any "Beer for Buddies" project serving

the thirsty G.I. Veterans organizations might well follow the example of the Marine Corps League.—Ed.

## EARLY COMMENTS ON "PURCHASE FOR PROFIT" ISSUE

Your June issue "Purchase for Profit" is an excellent one. To me there is considerable value in it, namely the fact that it is repetitive. That is, it comes out each year and brings forcefully to mind the job to be done and gives that additional push in not letting the current busy times push aside that important section of our operations.

S. W. MacKenzie, Dir. of Pur.  
U. S. Rubber Co.  
New York, N. Y.

Congratulations to you on this issue.

I just want to tell you what a wonderful job you have done in PURCHASING magazine for June, which is built around the idea of "Purchase for Profit."

My regular issue had not arrived before the convention. However, I picked up a copy from your booth at the Inform-a-Show and have been reading it ever since.

E. S. Page, Dir. of Pur.  
Great Lakes Carbon Corp.  
Chicago 11, Ill.

Congratulations to all your staff on the June "Purchase for Profit" issue of PURCHASING. I think it climaxes all your best efforts. Intelligent use by industrial purchasing agents will make this issue a veritable storehouse of information and inspiration.

George L. Wilson, Pur. Agt.  
Jefferson County Commission  
Birmingham, Ala.

## LIKES HIS MORNING PAPER

One of the good and pleasing things about the Purchasing Convention last week at the Waldorf, was to receive the morning paper with your compliments and cheery greetings.

I want to take this opportunity to thank you for this nice gesture, which was certainly appreciated.

P. T. Skove  
Perfection Stove Co.  
Cleveland 4, Ohio

● If you were at the Convention, you probably received a morning paper too. We're glad to be of service and happy that you like any small comforts we could provide.

Incidentally, our booth was a popular meeting place all during the show. Can't begin to tell you how many old friendships we renewed or new ones that we found.—Ed.

## SECTIONAL PROBLEMS

I was happy to receive my PURCHASING Magazine today, together with the folded chart on Controlled Materials Plan. I noticed this is marked "In II Sections." I wonder what became of Section I. I never got a copy of that.

Adele Schaaf  
Phoenix Chair Co.  
Sheboygan, Wisc.

● Wonder how many other readers were confused by this Section I and Section II business?

Reason for it is this:

The Post Office stipulates that second-class publications (like PURCHASING) contain no loose material between pages. The one exception permitted is in the case of folded editorial charts, tables, etc. When this is done, the following notation must be printed on the cover, "In Two Sections." And the magazine must be labeled, "Section I," and the loose insert (the Controlled Materials Plan chart, in this case) has to be labeled Section II.

If you received the magazine (Section I), with the loose CMP chart (Section II), nothing is missing. Not even the attendant confusion.—Ed.

## CODE NUMBER IDENTIFICATION SYSTEM FOR INVENTORIES

We are planning on setting up a code number identification system covering our material and supplies inventories.

Could you tell us where we may purchase books or references for this type of record?

S. A. Swanson, Pur. Agt.  
Cliffs Dow Chemical Co.  
Marquette, Michigan

● Best reference we know of on inventory classification code systems is to be found in a new book by Benjamin Melnitsky, "Management of Industrial Inventory." It contains a chapter devoted to the classification of materials and parts for inventory purposes, covering the principles to be observed, and citing examples of systems used by several different companies. Seems as though it will give you the information you want in a way that can be adapted to various situations.

Oh yes, we forgot to mention the publisher, it's our Conover-Mast Book Division. Same address as PURCHASING.—Ed.



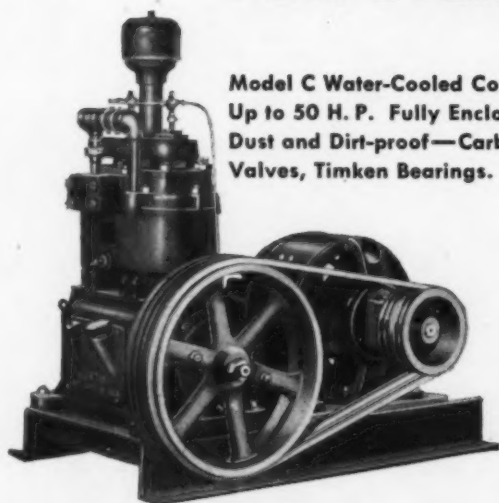
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I-51-2

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# Caster Quiz

Some interesting facts on caster construction which are important in reducing materials handling costs, the "Reducible 30%."\*



**Q** Why are *fully-hardened* bearing raceways important in swivel casters?

**A** Ball races in swivel casters take a pounding . . . and the caster without properly hardened ball races will soon lose its ease of swiveling.

**Q** Are there different qualities or degrees of hardness in caster ball raceways?

**A** Most certainly. Everything from a very thin flash to a deep hardening.

**Q** How can the buyer of casters tell the difference?

**A** He cannot without actual testing. The quality of hardness is not apparent to the eye . . . but it is a very important unseen quality.

**Q** What hardening process is used in producing Bassick "fully-hardened" raceways?

**A** Leeds & Northrup "Homocarb" furnaces . . . the same as used on aircraft engine parts . . . the highest quality process known . . . with electric controls which insure uniform high-quality hardness . . . one of the important unseen features which makes Bassick casters last longer!

**Q** Do all distributors handle Bassick casters?

**A** No! The Bassick Company carefully selects its distributors, works closely with them in making recommendations to meet your specific needs. In most major cities you'll find your Bassick distributor listed in the classified phone directory.



THE BASSICK COMPANY, Bridgeport 2, Conn. Division of Stewart-Warner Corp. In Canada: Bassick Division, Stewart-Warner-Alemite Corp., Ltd., Belleville, Ont.

\*According to cost analysts, materials-handling (about 30% of total cost) affords about the only real opportunities for cost reduction today.



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## continuous Valve Efficiency



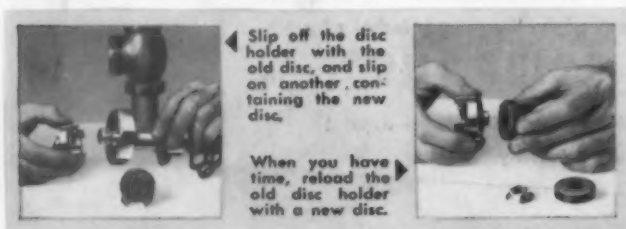
The disc holders shown above, fitted with Jenkins Discs, are for Jenkins Check, Globe, and Angle Valves. Two have guide disc nuts. One, at extreme right, is fitted with throttling nut.

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Disc replacement is simple and easy, can be done without removing valves from the line. To save more time, maintenance-wise valve users keep on hand a stock of disc holders fitted with the discs most commonly used.

#### Money-saving idea for disc-valve maintenance

Keep on hand a stock of disc holders fitted with the discs most commonly used. This permits quick replacements, saves valuable time.



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